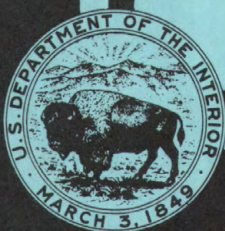
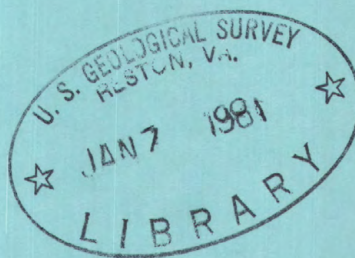


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Water Resources Data for North Dakota Water Year 1975



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT ND-75-1

Prepared in cooperation with the State of North Dakota
and with other agencies

CALENDAR FOR WATER YEAR 1975

1974

OCTOBER

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Water Resources Data for North Dakota Water Year 1975



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT ND-75-1

**Prepared in cooperation with the State of North Dakota
and with other agencies**

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PREFACE

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

This report is one of a series issued State by State under the general direction of J. S. Cragwall, Jr., Chief Hydrologist, and G. W. Whetstone, Assistant Chief Hydrologist for Scientific Publications and Data Management.

UNITED STATES DEPARTMENT OF THE INTERIOR

THOMAS S. KLEPPE, Secretary

GEOLOGICAL SURVEY

V. E. McKelvey, Director

Prepared in cooperation with

North Dakota State Water Commission
Oliver County, North Dakota
Corps of Engineers, U.S. Army
International Joint Commission, U.S. Department of State
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Bureau of Reclamation, 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

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Room 332 - Federal Building
Bismarck, N. Dak. 58501

1976

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FOR WHICH RECORDS ARE PUBLISHED

[Letters after station name designate type of data:
(c), chemical; (t), water temperature; (s) sediment;
(b), biological]

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WATER RESOURCES DATA FOR NORTH DAKOTA, 1975

- Section 1. Surface-Water Records
- Section 2. Water-Quality Records
- Section 3. Ground-Water Records

INTRODUCTION

Water resources data for the 1975 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 wells. This report contains discharge records for 146 gaging stations; stage or contents for 13 lakes and reservoirs; water quality for 43 gaging stations, 10 partial-record flow stations, 11 lakes, and 25 wells. Additional water data were collected at various sites, not part of 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.

Records of discharge (or 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 water year 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."

Beginning with the 1961 water year and continuing through water year 1974, streamflow data have been released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records beginning with the 1964 water year, and ground-water data since the 1971 water year have been similarly released either in separate reports or in conjunction with streamflow records. These reports provided rapid release of preliminary water data shortly after the end of the water year. The final data were then released in the water-supply paper series mentioned above. Beginning with the 1975 water year, water data will be released on a State-boundary basis in final form and will not be republished in the water-supply paper

series. The 1975 and subsequent water year reports will be in a series which will 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 report is identified as "U.S. Geological Survey Water-Data Report ND-75-1." These reports are for sale to the public for a nominal fee from the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia, 22151. For more information on publications available, see "PUBLICATIONS" on a subsequent page.

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. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

North Dakota State Water Commission
Vernon Fahy, Chief Engineer.

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
Bureau of Reclamation, 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
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."

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 English units to International System of units (SI) on page 36.

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 metres.

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.

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

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

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at $35^{\circ}\text{C} \pm 1^{\circ}\text{C}$ on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 ml of sample.

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warmblooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at $44.5^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 ml of sample.

Fecal streptococcal bacteria are bacteria found also in the intestine of warmblooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at $35^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ on M-enterococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 ml of sample.

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

Benthic organisms (invertebrates) are animals inhabiting the bottom of an aquatic environment. They include a number of different types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are frequently used as indicators of environmental quality because many have restricted mobility during their aquatic life phase, as well as a relatively long lifespan which allows for response to prevailing and changing water-quality conditions. Many benthic organisms inhabit specific types of environments, which if changed, results in changes in the composition of the benthic community.

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

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

Ash weight is the weight or amount of residue present after the residue from the dry weight determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash weight values of zooplankton and phytoplankton are expressed in g/m³ (grams per cubic metre), and periphyton and benthic organisms in g/m² (grams per square metre).

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

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.9835 acre-feet, 646,317 gallons, or 2,446 cubic metres. It represents a runoff of 0.0372 inch from 1 square mile, or 0.3468 millimetre from 1 square kilometre.

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

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

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 millilitres is determined by the immediate incubation membrane filter method.

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 all conditions as listed:

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

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.

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 (FT³/S, ft³/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 metres per second.

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

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

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

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

Drainage area of a stream at the 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 stream 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 body of impounded surface water together with all tributary surface stream 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 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 gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

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

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult. 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-pupa-adult or egg-nymph-adult.

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

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

Milligrams per litre (MG/L, mg/l) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per litre represents the weight of solute per unit volume of water. Milligrams or micrograms per litre may be converted to milliequivalents (one thousandth of a gram-equivalent weight of a constituent) per litre by multiplying the factors in table 1, page 9. Concentration of suspended sediment also is expressed in mg/l , and is based on the weight of sediment per litre of water-sediment mixture. Sediment concentrations may be converted to parts per million by using the factors in table 2, p. 9.

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

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

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square metres (m^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 millilitres (ml) or litres (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 or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimetres (mm), of suspended sediment or bed material determined 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 classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

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

The particle-size distribution 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, weight, or volume.

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.

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 litre. 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.

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

<u>Ion</u>	<u>Multi- ply by</u>	<u>Ion</u>	<u>Multi- ply by</u>
Aluminum (Al^{+3})...	0.11119	Iodide (I^{-1}).....	0.00788
Ammonia as NH_4^{+1} ..	.05544	Iron (Fe^{+2})*.....	.05372
Barium (Ba^{+2}).....	.01456	Lead (Pb^{+2})*.....	.00965
Bicarbonate (HCO_3^{-1})	.01639	Lithium (Li^{+1})*....	.14411
Bromide (Br^{-1})....	.01251	Magnesium (Mg^{+2})..	.08226
Calcium (Ca^{+2})....	.04990	Manganese (Mn^{+2})*.	.03640
Carbonate (CO_3^{-2})..	.03333	Nickel (Ni^{+2})*....	.03406
Chloride (Cl^{-1})...	.02821	Nitrate (NO_3^{-1})...	.01613
Chromium (Cr^{+6})*..	.11539	Nitrite (NO_2^{-1})...	.02174
Cobalt (Co^{+2})*....	.03394	Phosphate (PO_4^{-3})..	.03159
Copper (Cu^{+2})*....	.03148	Potassium (K^{+1})...	.02557
Cyanide (Cn^{-1})....	.03844	Sodium (Na^{+1})....	.04350
Fluoride (F^{-1})....	.05264	Strontium (Sr^{+2})*.	.02283
Hydrogen (H^{+1})....	.99209	Sulfate (SO_4^{-2})...	.02082
Hydroxide (OH^{-1})..	.05880	Zinc (Zn^{+2})*.....	.03060

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

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

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

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

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.

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. Their concentrations are expressed as number of cells per millilitre (cells/ml).

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per millilitre (cells/ml).

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per millilitre (cells/ml).

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.

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.

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

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

Total sediment discharge or total sediment load is the sum of the suspended-sediment discharge and the bedload discharge. It is the total quantity of sediment, as measured by dry weight or volume, that is discharged during a given time.

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

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

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

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

Substrate is the physical surface upon which an organism lives.

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

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The use of artificial substrates 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 plexiglass strips for periphyton collection.

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.....	<u>Hexagenia</u>
Species.....	<u>Hexagenia limbata</u>

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 water year.

Tons per acre-foot indicates the dry weight of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per litre 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 (as used in tables of chemical analyses) refers to the amount of a substance that is present both in solution and in suspension. Analyses are performed on representative samples of water-suspended sediment mixtures.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir. See also table for converting English Units to International Units on p. 36.

WRD is used as an abbreviation for "Water-Resources Data" in the summary REVISIONS paragraph to refer to previously published State annual basic-data reports.

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

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

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

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

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

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

Radioisotopes are isotope forms of an element that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight, but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus. For example: Ordinary chlorine is a mixture of isotopes having atomic weights 35 and 37, with the natural mixture having atomic weight about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron (Rose, 1966). There are 275 isotopes of the 81 stable elements in addition to over 800 radioactive isotopes.

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

A picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci).¹⁰ 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).

DOWNSTREAM ORDER AND STATION NUMBER

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

As an added means of identification, each gaging station, partial-record station, and water-quality 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 gaging stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left in the 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." In this report, the records are listed in downstream order by parts. The part number refers to an area whose boundaries coincide with certain natural drainage lines. Records in this report are in Part 5 (Hudson Bay and upper Mississippi River basins) and Part 6 (Missouri River basin). All records for a drainage basin encompassing more than one State can be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

Miscellaneous 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 is a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and a miscellaneous site are the same, assign sequential numbers "01," "02," etc. as one would for wells. See figure 1 below.

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 150-51-15ADC is in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 15, T. 150 N., R. 51 W. Consecutive terminal numerals are added if more than one well is recorded within a 10-acre tract.

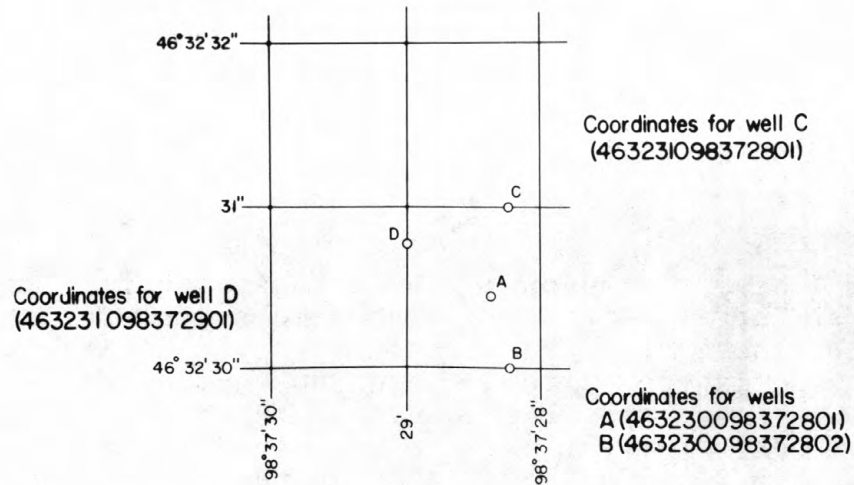


FIGURE 1.--System of numbering wells (Latitude and Longitude)

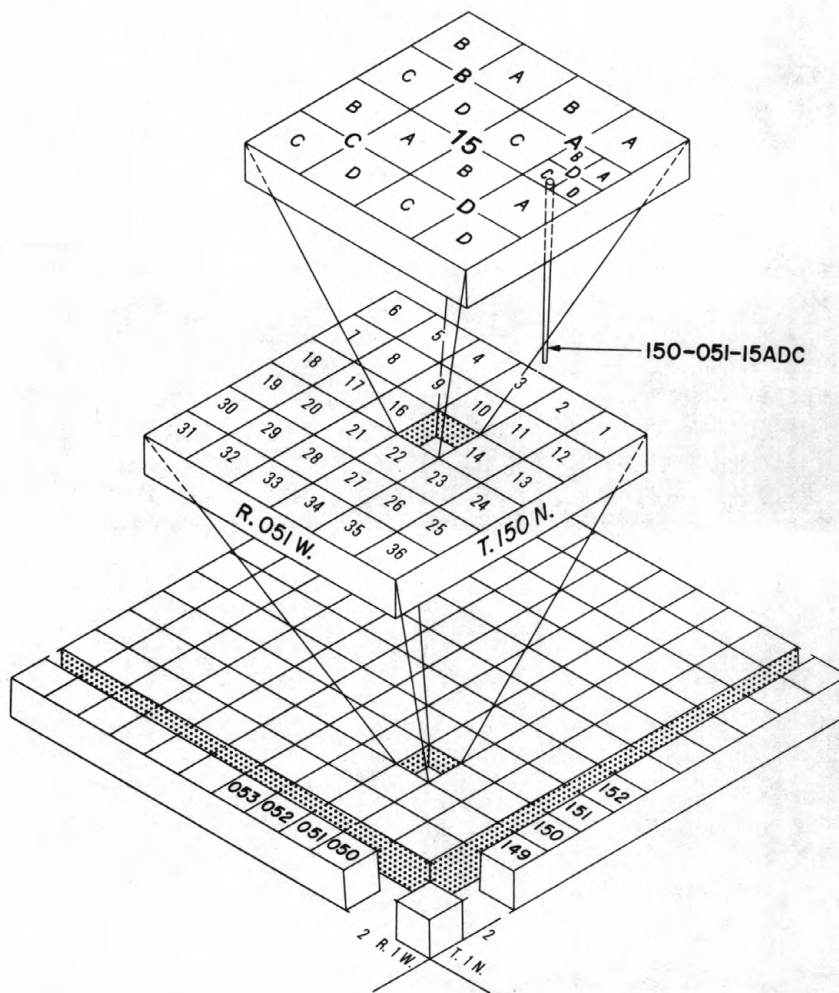


FIGURE 2.--System of numbering wells (Township and Range)

EXPLANATION OF SURFACE WATER 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 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 15-, 30-, or 60-minute intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. 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. Surface areas of lakes or reservoirs are determined from instrument surveys using standard methods. The configuration of the reservoir bottom is determined by sounding at many points.

For stream-gaging stations, rating tables given 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), 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.

At some stream-gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations 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 the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for 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, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, adjoining good record, 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 or canals 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. A calendar for the current water year is shown on the reverse side of the front cover to facilitate finding the day of the week for any date.

The description of the gaging stations gives the location, drainage area, period of record, type and history of gages, average discharge, extremes of discharge or contents, general remarks, and notations of revisions of previously published records. 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." The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey unless otherwise qualified. 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 stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. The maximum discharge (or contents) and the maximum gage height, the minimum discharge if there is little or no regulation (or minimum contents) and the minimum gage height if it is significant are given under "EXTREMES." The minimum daily discharge is given if there is extensive regulation (also the minimum discharge and gage height if they are abnormally low). In the first paragraph headed "Current year," the data given are for the complete current water year unless otherwise specified. In the second paragraph under "EXTREMES" headed "Period of record;" the data given

are for the period of record given in PERIOD OF RECORD paragraph. Reliable information concerning major floods that occurred outside the period of record is given in the third or last paragraph under "EXTREMES." Unless otherwise qualified, the maximum discharge (or contents) corresponds 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 at the same time as the maximum discharge (or contents), it is given separately. Information pertaining to the accuracy of the discharge records, to conditions that affect the natural flow at the gaging station, and availability of water quality records, 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 also given under "REMARKS."

Previously published 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 "REVISIONS (WATER YEARS)" 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, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge were revised, that fact is brought out by notations after the year dates as follows: "(M)" means 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 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.

Skeleton capacity tables are published for all reservoirs for which records of contents are published on a daily basis.

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 following "MAX" are the maximum daily discharges for the calendar and water years; likewise, those following "MIN" are the minimum daily discharges.

Footnotes to the table of daily discharges 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.

Peak discharges and their times of occurrence and corresponding gage heights for many stations are listed below the yearly summary. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year can be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subjected 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.

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 and miscellaneous sites are given in three tables at the end of the surface-water records in this report. The first is a table of discharge measurements at low-flow partial-record stations, the second is a table of annual maximum stage and discharge at crest-stage stations, and the third is a table of discharge measurements at miscellaneous sites.

Accuracy of data

The accuracy of discharge 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 interpretation 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 of true value; "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 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. 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 and miscellaneous sites.

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.

Publications

In each water-supply paper entitled, "Surface Water Supply of the United States" there is a list of numbers of preceding water-supply papers containing streamflow information for the area covered by that report. In addition, there is a list of numbers of water-supply papers containing detailed information on major floods in the area. Records for stations in North Dakota for the period October 1960 to September 1970 are in Water-Supply Papers 1913, 1917, 2113, and 2117.

Two series of summary reports entitled, "Compilation of Records of Surface Waters of the United States" have been published; the first series covers the entire period of record through September 1950 and the second series covers the period October 1950 to September 1960. These reports contain summaries of monthly and annual discharge and month-end storage for all previously published records, as well as some records not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical. The yearly summary table for each gaging station lists the numbers of the water-supply papers in which daily records were published for that station. Records for stations in North Dakota are compiled in Water-Supply Papers 1308 and 1309 through September 1950, and in 1728 and 1729 for October 1950 to September 1960.

Special reports on major floods or droughts or of other hydrologic studies for the area have been issued in publications other than water-supply papers. Information relative to these reports may be obtained from the district office.

Other data available

Information of a more detailed nature than that published for most of the gaging stations, such as 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.

EXPLANATION OF WATER QUALITY RECORDS

Collection and examination of data

Water samples for analyses usually are collected at or near gaging stations. The discharge records at these stations are used in conjunction with the computations of the chemical constituents and sediment loads in this report.

Descriptive statements are given for water-quality stations located at or near streamflow stations. Given are location, drainage area, periods of record for the various water-quality data, extremes of pertinent data, and general remarks, in a format similar to that used for streamflow gaging stations. For ground-water stations, no descriptive statements are given; however, the well number, depth of well, date of sampling, and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

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

Prior to the 1968 water year, data for chemical constituents and concentration of suspended sediment were reported in parts per million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). In October 1967 the U.S. Geological Survey began reporting data for chemical constituents and concentrations of suspended sediment in milligrams per litre (mg/l) and water temperatures in degrees Celsius (°C). In waters with a density of 1.000 g/ml (grams per millilitre), parts per million and milligrams per litre can be considered equal. In waters greater than 1.000 g/ml, values in parts per million should be multiplied by the density to convert to milligrams per litre. Temperatures reported in degrees Celsius may be converted to degrees Fahrenheit by using table 3, p. 28.

In October 1968, the Geological Survey began reporting many of the chemical constituents as well as the minor elements in micrograms per litre instead of milligrams per litre. (See "Definition of Terms," p. 2 and table for converting English Units to SI Units, p. 36).

Solutes

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

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and 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 the available sampling techniques and methods of analysis.

For chemical-quality stations equipped with noncontinuous-digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the U.S. Geological Survey district office at the address given on the back of the title page of this report.

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

Temperature

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

At stations where continuously recording thermographs are present, the records consist of maximum and minimum temperatures for each day and the monthly averages.

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

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
0.0	32	10.0	50	20.0	68	30.0	86	40.0	104
.5	33	10.5	51	20.5	69	30.5	87	40.5	105
1.0	34	11.0	52	21.0	70	31.0	88	41.0	106
1.5	35	11.5	53	21.5	71	31.5	89	41.5	107
2.0	36	12.0	54	22.0	72	32.0	90	42.0	108
2.5	36	12.5	54	22.5	72	32.5	90	42.5	108
3.0	37	13.0	55	23.0	73	33.0	91	43.0	109
3.5	38	13.5	56	23.5	74	33.5	92	43.5	110
4.0	39	14.0	57	24.0	75	34.0	93	44.0	111
4.5	40	14.5	58	24.5	76	34.5	94	44.5	112
5.0	41	15.0	59	25.0	77	35.0	95	45.0	113
5.5	42	15.5	60	25.5	78	35.5	96	45.5	114
6.0	43	16.0	61	26.0	79	36.0	97	46.0	115
6.5	44	16.5	62	26.5	80	36.5	98	46.5	116
7.0	45	17.0	63	27.0	81	37.0	99	47.0	117
7.5	45	17.5	63	27.5	81	37.5	99	47.5	117
8.0	46	18.0	64	28.0	82	38.0	100	48.0	118
8.5	47	18.5	65	28.5	83	38.5	101	48.5	119
9.0	48	19.0	66	29.0	84	39.0	102	49.0	120
9.5	49	19.5	67	29.5	85	39.5	103	49.5	121

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

Sediment

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

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

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

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

Publications

The annual series of water-supply papers that contain information on quality of surface waters in North Dakota are listed below.

<u>Water Year</u>	<u>WSP No.</u>	<u>Water year</u>	<u>WSP No.</u>	<u>Water year</u>	<u>WSP No.</u>	<u>Water year</u>	<u>WSP No.</u>
1941	942	1950	1187	1959	1643	1968	2094
1942	950	1951	1198	1960	1743		2095
1943	970	1952	1251	1961	1883	1969	2144
1944	1022	1953	1291	1962	1943		2145
1945	1030	1954	1351	1963	1949	1970	2154
1946	1050	1955	1401	1964	1956		2155
1947	1102	1956	1451	1965	1963	*1971	2164
1948	1132	1957	1521	1966	1993		2165
1949	1162	1958	1572	1967	2013		

* In press.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Only ground-water level data from a basic national network of observation wells are published herein. These water-level measurements are intended to provide a sampling and historical record of water-level changes in the nation's most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on the grid system of latitude and longitude as shown in figure 1, and (2) a local number that is provided for continuity with older reports and for other use as dictated by local needs.

Measurements are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well insure that measurements at each well are consistent accuracy and reliability.

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

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error of 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 hundredth 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.

Publications

Publication of ground-water level data for the United States in Water-Supply Papers was begun by the Geological Survey in 1935. From 1935 through 1939, a single Water-Supply Paper for each year covering the entire nation was issued (Water-Supply Papers 777, 817, 840, 845, and 886). From 1940 through 1974, separate Water-Supply Papers were issued for 6 sections of the United States. Water-level data for North Dakota are in the Water-Supply Papers listed below, each report containing one or more calendar years (January-December) of data. Data in this report are for the 12-month water year ending September 30.

<u>Calendar</u> <u>year</u>	<u>WSP</u> <u>No.</u>	<u>Calendar</u> <u>year</u>	<u>WSP</u> <u>No.</u>	<u>Calendar</u> <u>year</u>	<u>WSP</u> <u>No.</u>	<u>Calendar</u> <u>year</u>	<u>WSP</u> <u>No.</u>
1936	817	1943	988	1949	1158	1955	1406
1937	840	1944	1018	1950	1167	1956	1456
1938	845	1945	1025	1951	1193	1957-61	1781
1939	886	1946	1073	1952	1223	1962-66	1976
1940	908	1947	1098	1953	1267	1967-71	2090
1941	938	1948	1128	1954	1323	*1972-74	2163
1942	946						

* In press.

Information about reports and other data on ground water in North Dakota may be obtained from the district office, at the address given on the back of the title page.

HYDROLOGIC CONDITIONS

Streamflow was above normal in most areas of the State. Precipitation in the fall and winter of 1974-75 was generally below normal. Extremely heavy snowfall in late March and early April and above normal precipitation during the melting period resulted in above normal runoff for the year.

Severe flooding occurred in the Red River of the North and Souris River basins during the spring melting period. Moderate flooding occurred in the James River basin and many smaller tributaries to the Missouri River basin.

Torrential rains occurred in late June and early July in a large area in the southeastern part of the State. Runoff from this storm caused severe flooding in the Maple, Sheyenne, Wild Rice, Red River of the North and James River basins.

Reservoirs in the State except Lake Sakakawea were near desired operating levels at the end of the year. Lake Sakakawea reached a record high level in mid-July due to extremely high runoff in the upper Missouri River basin. Flow in the Missouri River downstream from Garrison Dam was the highest since the construction of the Dam in 1953.

For two key stations a comparison of monthly and yearly mean discharges for the 1975 water year with the median discharge for 30 years (1941-70) is shown in figure 3.

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Table 4.--Factors for converting English units to International System (SI) units

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

Multiply English units	By	To obtain SI units
<i>Length</i>		
feet (ft)	.3048	metres (m)
miles (mi)	1.609	kilometres (km)
<i>Area</i>		
acres	4047	square metres (m ²)
	.4047	*hectares (ha)
	.4047	square hectometre (hm ²)
	.004047	square kilometres (km ²)
square miles (mi ²)	2.590	square kilometres (km ²)
<i>Volume</i>		
cubic feet (ft ³)	28.32	cubic decimetres (dm ³)
	.02832	cubic metres (m ³)
cfs-day (ft ³ /s-day)	2447	cubic metres (m ³)
	.002447	cubic hectometres (hm ³)
acre-feet (acre-ft)	1233	cubic metres (m ³)
	.001233	cubic hectometres (hm ³)
	.000001233	cubic kilometres (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	28.32	litres per second (l/s)
	28.32	cubic decimetres per second (dm ³ /s)
	.02832	cubic metres per second (m ³ /s)

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

WATER RESOURCES DATA FOR NORTH DAKOTA, 1975

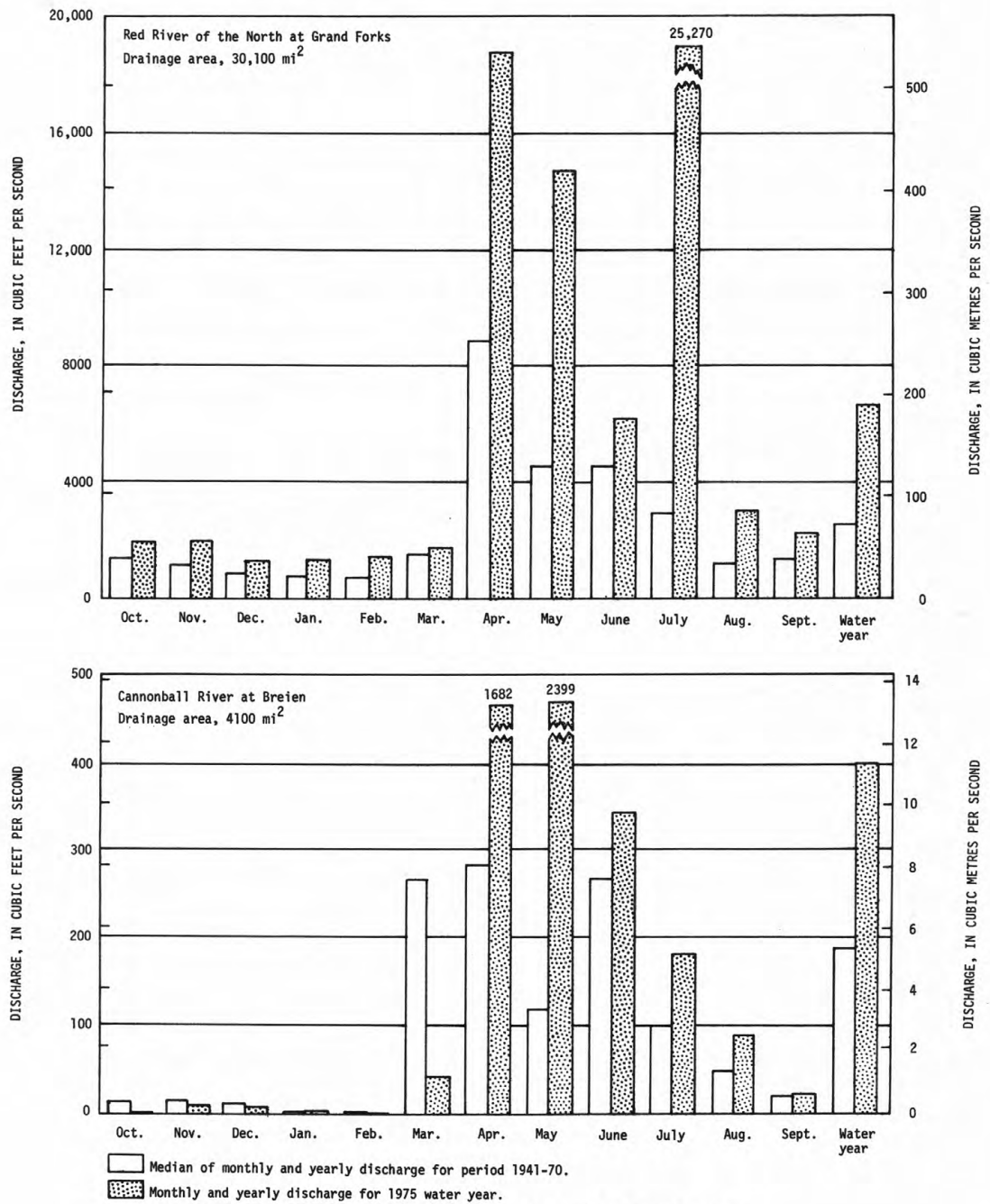


FIGURE 3.--Runoff during 1975 water year compared with median runoff for period 1941-70.

SECTION 1. SURFACE WATER RECORDS

RED RIVER OF THE NORTH BASIN

05050000 BOIS DE SIOUX RIVER NEAR WHITE ROCK, S. DAK.

LOCATION.--Lat 45°51'45", long 96°34'25", in SW¼SW¼ sec.27, T.128 N., R.47 W., Roberts County, on left bank just downstream from Big Slough Outlet, 300 ft (90 m) downstream from White Rock Dam, 4 mi (6 km) south of White Rock, and 5 mi (8 km) northwest of Wheaton, Minn.

DRAINAGE AREA.--1,160 mi² (3,004 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 960.00 ft (292.608 m) above mean sea level, 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.

AVERAGE DISCHARGE.--34 years, 78.7 ft³/s (2.229 m³/s), 57,020 acre-ft/yr (70.3 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 552 ft³/s (15.6 m³/s) July 16, gage height, 8.95 ft (2.728 m); maximum gage height, 10.41 ft (3.173 m) July 1, backwater from inflow downstream; no flow for many days. Period of record: Maximum discharge, 3,770 ft³/s (107 m³/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.

REMARKS.--Records fair. Flow regulated by Lake Traverse-Boise de Sioux Flood Control and Water Conservation project, available capacity for flood control, 137,000 acre-ft (169 hm³).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.01					0	216	19	391	3.6	12
2	0	.01					0	237	21	322	12	13
3	0	.01					0	267	22	268	8.0	13
4	0	0					0	254	23	265	4.6	12
5	.01	0					0	234	21	250	4.0	12
6	.01	0					0	220	19	252	7.0	12
7	.02	0					0	214	12	293	18	9.8
8	.04	0					0	214	10	294	14	10
9	.06	0					0	216	13	246	12	10
10	.07	0					0	218	11	274	11	12
11	.07	0					0	211	12	297	11	7.9
12	.06	0					.02	211	11	344	11	11
13	.04	0					.30	215	13	358	11	11
14	.02	0					3.0	202	16	412	11	11
15	.01	0					5.8	197	18	482	9.4	11
16	.01	0					10	206	20	507	7.9	10
17	.01	0					20	203	27	551	7.9	11
18	.01	0					35	202	48	520	7.2	12
19	0	0					44	204	66	492	8.3	10
20	0	0					49	193	104	458	12	5.8
21	0	0					55	177	88	370	20	6.8
22	0	0					40	171	160	277	21	28
23	0	0					38	181	129	277	22	48
24	0	0					33	181	169	265	20	46
25	0	0					26	155	216	254	17	45
26	0	0					23	145	292	238	13	55
27	0	0					43	140	374	224	12	65
28	0	0					55	105	276	212	13	65
29	0	0					118	55	217	203	13	64
30	0	0					197	40	187	177	14	64
31	0	---					---	12	---	12	15	---
TOTAL	.45	.03	0	0	0	0	795.12	5696	2614	9785	370.9	703.3
MEAN	.015	.001	0	0	0	0	26.5	184	87.1	316	12.0	23.4
MAX	.07	.01	0	0	0	0	197	267	374	551	22	65
MIN	0	0	0	0	0	0	0	12	10	12	3.6	5.8
AC-FT	.9	.06	0	0	0	0	1580	11300	5180	19410	736	1390
CAL YR 1974	TOTAL	946.84	MEAN	2.59	MAX	23	MIN	0	AC-FT	1880		
WTR YR 1975	TOTAL	19964.80	MEAN	54.7	MAX	551	MIN	0	AC-FT	39600		

05051500 RED RIVER OF THE NORTH AT WAHPETON, N. DAK.

LOCATION.--Lat 46°15'55", long 96°35'40", in NE¼ sec.8, T.132 N., R.47 W., Richland County, 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 (kilometre 882.7).

DRAINAGE AREA.--4,010 mi² (10,390 km²), approximately.

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

GAGE.--Water-stage recorder and concrete and wooden dam. Datum of gage is 943.24 ft (287.50 m) above mean sea level. 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.

AVERAGE DISCHARGE.--32 years (1943-75), 538 ft³/s (15.24 m³/s) 389,800 acre-ft/yr (481 hm³/yr); median of yearly mean discharges, 500 ft³/s (14.2 m³/s) 362,000 acre-ft/yr (450 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 3,850 ft³/s (109 m³/s) July 3, gage height, 10.84 ft (3.304 m); minimum, 85 ft³/s (2.41 m³/s) Dec. 9, gage height, 2.84 ft (0.866 m).

Period of record: Maximum discharge, 9,200 ft³/s (261 m³/s) Apr. 10, 1969, gage height, 16.34 ft (4.980 m); minimum, 8 ft³/s (0.23 m³/s) Aug. 25, 1961, gage height, 2.26 ft (0.689 m); minimum gage height, 1.76 ft (0.536 m) Sept. 8, 9, 1969 (gates open).

A stage of 17.0 ft (5.182 m), discharge, 10,500 ft³/s (297 m³/s) occurred in the spring of 1897 and has not been exceeded since.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft (17.4 hm³) at elevation 1,070 ft (326.136 m) above mean sea level, adjustment of 1912; Lake Traverse, capacity, 137,000 acre-ft (169 hm³), available for flood control; numerous other controlled lakes and ponds, and several powerplants. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	300	332	234	155	192	255	420	1740	1010	2370	760	385
2	268	311	219	155	192	255	420	1600	983	3480	710	386
3	239	288	208	155	198	250	420	1470	967	3810	650	377
4	212	286	205	154	220	250	420	1410	982	3800	622	379
5	221	286	203	155	260	250	480	1340	955	3550	614	385
6	218	282	205	155	260	250	500	1300	896	3130	614	384
7	220	281	200	156	260	250	500	1270	881	2660	614	388
8	263	280	137	145	260	250	520	1250	882	2190	604	388
9	352	271	124	141	260	250	520	1230	899	1930	607	387
10	372	273	210	140	260	250	580	1220	906	1770	614	381
11	333	268	222	130	260	250	621	1210	868	1670	614	375
12	298	268	211	130	260	250	681	1200	880	1600	618	371
13	289	268	200	130	260	255	1110	1200	867	1580	618	372
14	285	262	192	240	260	260	1750	1210	872	1560	609	370
15	293	350	186	250	260	275	2060	1230	909	1540	606	363
16	288	421	177	245	258	300	1600	1210	896	1570	611	356
17	288	329	168	240	258	325	1830	1210	905	1540	605	356
18	287	268	162	235	258	370	1770	1210	924	1470	598	329
19	292	261	160	232	258	380	2050	1220	1140	1400	610	330
20	296	252	160	230	258	400	2200	1200	1640	1320	642	333
21	285	237	160	220	256	420	1960	1180	1990	1280	628	333
22	282	271	160	218	256	440	1630	1180	2510	1220	629	333
23	288	248	160	214	256	470	1590	1200	2600	1190	632	325
24	285	175	158	208	255	500	1590	1170	2220	1100	625	325
25	285	182	158	200	255	490	1550	1110	1880	1090	606	355
26	286	226	158	200	255	480	1650	1090	1750	1000	566	358
27	286	296	155	200	255	460	1800	1090	1620	980	387	364
28	282	287	155	200	255	450	1900	1080	1550	960	376	373
29	283	249	155	198	---	440	1840	1070	1550	953	382	373
30	284	243	155	196	---	440	1790	1040	1570	900	385	376
31	295	---	155	194	---	430	---	1010	---	830	389	---
TOTAL	8755	8251	5512	5821	6995	10595	37752	38150	38502	55403	18145	10890
MEAN	282	275	178	188	250	342	1258	1231	1283	1787	585	363
MAX	372	421	234	250	260	500	2200	1740	2600	3810	760	388
MIN	212	175	124	130	192	250	420	1010	867	830	376	325
AC-FT	17370	16370	10930	11550	13870	21020	74880	75670	76370	109900	35990	21600
CAL YR 1974	TOTAL	191930	MEAN 526	MAX 1240	MIN 124	AC-FT 380700						
WTR YR 1975	TOTAL	244771	MEAN 671	MAX 3810	MIN 124	AC-FT 485500						

RED RIVER OF THE NORTH BASIN

05051600 WILD RICE RIVER NEAR RUTLAND, N. DAK.

LOCATION.--Lat 46°01'20", long 97°30'40", in SE¼SE¼ sec.36, T.130 N., R.55 W., Sargent County, 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 mi² (1,410 km²), of which about 250 mi² (648 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,197.73 ft (365.068 m) above mean sea level. Prior to Dec. 11, 1960, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--16 years, 9.44 ft³/s (0.267 m³/s), 6,840 acre-ft/yr (8.43 hm³/yr); median of yearly mean discharges, 5.0 ft³/s (0.14 m³/s), 3,600 acre-ft/yr (4.4 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 133 ft³/s (3.77 m³/s) July 1, gage height, 4.52 ft (1.378 m); no flow for several months.

Period of record: Maximum discharge, 1,270 ft³/s (36.0 m³/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.

REMARKS.--Records good, except those for periods of ice effect and no gage height record which are fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	22	1.6	100	.01	6.3
2							0	26	1.8	98	.01	5.3
3							0	26	1.8	86	0	4.1
4							0	24	2.2	81	0	3.2
5							0	24	1.9	78	0	2.5
6							0	19	1.4	72	0	1.8
7							0	17	1.1	67	0	1.4
8							0	14	.79	60	0	1.1
9							0	11	.94	48	0	1.1
10							0	8.0	1.5	37	0	1.1
11							0	6.5	1.4	27	0	1.0
12							0	3.6	1.1	24	0	1.0
13							0	3.2	.83	21	0	1.0
14							0	3.2	.70	19	0	.90
15							0	2.3	.83	16	0	.80
16							0	2.3	1.4	13	0	.80
17							.50	1.8	1.4	9.5	0	.75
18							2.0	1.7	1.1	6.0	0	1.0
19							5.3	2.3	1.0	2.1	0	5.0
20							2.0	1.9	1.0	1.1	.61	15
21							.80	1.6	1.0	.83	.34	20
22							.80	1.6	1.0	.83	.02	10
23							.60	3.0	1.0	.70	.69	4.1
24							.42	3.6	1.0	.94	2.8	5.3
25							.38	7.5	.50	.94	3.2	4.6
26							1.0	6.0	.50	1.0	2.8	3.2
27							1.8	3.5	.50	.94	2.3	1.5
28							8.0	2.6	10	.65	2.3	.94
29					---		12	2.3	70	.38	3.8	.56
30					---		16	1.8	90	.10	5.3	.22
31		---			---		---	1.4	---	.01	6.3	---
TOTAL	0	0	0	0	0	0	51.60	254.7	201.29	873.02	30.48	105.57
MEAN	0	0	0	0	0	0	1.72	8.22	6.71	28.2	.98	3.52
MAX	0	0	0	0	0	0	16	26	90	100	6.3	20
MIN	0	0	0	0	0	0	0	1.4	.50	.01	0	.22
AC-FT	0	0	0	0	0	0	102	505	399	1730	60	209
CAL YR 1974 TOTAL	545.80											
WTR YR 1975 TOTAL	1516.66											
MEAN 1.50												
MAX 19												
MIN 0												
AC-FT 1080												
AC-FT 3010												

PEAK DISCHARGE (BASE, 30 FT³/S).--July 1, 133 FT³/S (4.52 FT).

05051700 WILD RICE RIVER NEAR CAYUGA, N. DAK.

LOCATION.--Lat 46°07'30", long 97°21'40", on line between secs.29 and 30, T.131 N., R.53 W., Sargent County, on left bank 20 ft (6 m) downstream from county highway bridge, 1.2 mi (1.9 km) downstream from Shortfoot Creek, 2.5 mi (4.0 km) downstream from Crooked Creek, and 3.5 mi (5.6 km) northeast of Cayuga.

DRAINAGE AREA.--955 mi² (2,473 km²), of which about 390 mi² (1,010 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,095.64 ft (333.951 m) above mean sea level, levels by Bureau of Reclamation. Prior to Oct. 9, 1957, nonrecording gage 0.8 mi (1.3 km) upstream at different datum.

AVERAGE DISCHARGE.--19 years, 18.5 ft³/s (0.524 m³/s), 13,400 acre-ft/yr (16.5 hm³/yr); median of yearly mean discharges 8.2 ft³/s (0.23 m³/s), 5,900 acre-ft/yr (7.3 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 636 ft³/s (18.0 m³/s) July 1, gage height, 7.66 ft (2.335 m); no flow for several months.

Period of record: Maximum discharge, 1,710 ft³/s (48.4 m³/s) Apr. 12, 1969, gage height, 9.32 ft (2.841 m); maximum gage height, 10.90 ft (3.322 m), Apr. 7, 1969, backwater from ice; no flow at times each year.

REMARKS.--Records good. Some regulation by Fish and Wildlife Service reservoirs, of which Lake Tewaukon is the largest. Small diversions for irrigation. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	15	.53	469	1.2	.33
2							0	12	.53	251	1.2	.25
3							0	11	.47	122	1.2	.22
4							0	9.4	.53	94	1.2	.20
5							0	9.1	.41	55	1.0	.21
6							0	9.1	.36	35	.90	.14
7							0	9.1	.23	22	.73	.10
8							0	8.5	.23	15	.66	.08
9							.05	8.6	.75	12	.49	.04
10							.10	8.0	.60	9.2	.31	.03
11							.15	7.6	.53	7.8	.21	.02
12							.25	6.5	.53	7.8	.63	.01
13							1.5	6.4	.36	11	.98	0
14							5.3	6.2	.47	13	.55	0
15							6.0	5.9	.47	13	.17	0
16							4.0	5.3	.35	12	.20	0
17							6.2	3.6	.37	11	.18	0
18							18	4.3	.31	9.2	.11	.41
19							12	4.0	1.4	7.8	.19	.17
20							6.9	4.4	4.6	6.3	2.7	.10
21							5.6	3.6	8.3	5.6	3.0	.05
22							5.9	3.2	8.3	5.0	3.0	.06
23							8.3	3.7	5.3	5.9	2.1	.03
24							8.3	3.1	4.0	5.0	1.4	.01
25							6.7	2.5	3.8	4.3	1.1	0
26							19	1.8	3.0	3.6	.97	0
27							29	1.4	1.8	2.8	.81	0
28							18	1.0	1.0	2.0	.85	0
29							20	1.0	60	1.7	.69	0
30							19	.47	212	1.2	.66	0
31		---			---		---	.27	---	.93	.66	---
TOTAL	0	0	0	0	0	0	200.25	176.04	321.53	1221.13	30.05	2.46
MEAN	0	0	0	0	0	0	6.68	5.68	10.7	39.4	.97	.082
MAX	0	0	0	0	0	0	29	15	212	469	3.0	.41
MIN	0	0	0	0	0	0	0	.27	.23	.93	.11	0
AC-FT	0	0	0	0	0	0	397	349	638	2420	60	4.9
CAL YR 1974	TOTAL	406.22	MEAN 1.11	MAX 40	MIN 0	AC-FT 806						
WTR YR 1975	TOTAL	1951.46	MEAN 5.35	MAX 469	MIN 0	AC-FT 3870						

RED RIVER OF THE NORTH BASIN

05053000 WILD RICE RIVER NEAR ABERCROMBIE, N. DAK.

LOCATION.--Lat 46°28'05", long 96°47'00", in NE¼NE¼ sec.36, T.135 N., R.49 W., Richland County, 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 mi² (5,390 km²), of which about 590 mi² (1,530 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder and masonry control. Datum of gage is 907.94 ft (276.740 m) above mean sea level. 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.

AVERAGE DISCHARGE.--43 years, 73.0 ft³/s (2.067 m³/s), 52,890 acre-ft/yr (65.2 hm³/yr); median of yearly mean discharges, 29 ft³/s (0.82 m³/s), 21,000 acre-ft/yr (26 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 3,500 ft³/s (99.1 m³/s) July 4, gage height, 19.16 ft (5.840 m); no flow for several months.
Period of record: Maximum discharge, 9,540 ft³/s (270 m³/s) Apr. 11, 1969, gage height, 24.58 ft (7.492 m); no flow at times most years.
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.

REMARKS.--Records fair. Some regulation by Fish and Wildlife Service reservoirs, of which Lake Tewaukon is the largest. Some small diversions for irrigation. Records of chemical analyses and water temperatures for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1388: 1939, 1941(M). WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	.20	576	45	2160	80	21
2						0	.20	536	40	2860	79	13
3						0	.20	464	34	3130	84	7.9
4						0	.20	371	33	3440	75	3.1
5						0	.20	289	30	3160	59	2.1
6						0	.20	241	25	2740	49	1.3
7						0	.30	208	21	2280	43	.94
8						0	.30	180	19	1890	36	.61
9						0	.40	151	17	1630	31	.31
10						0	.50	123	16	1420	24	.24
11						0	1.0	102	14	1330	16	.38
12						0	.25	87	11	1220	14	.31
13						0	.550	74	8.6	1110	11	.12
14						0	.950	70	7.9	964	8.6	.01
15						0	1350	61	11	816	5.2	.01
16						0	2180	55	12	668	1.9	.02
17						0	2500	53	14	565	1.2	.08
18						0	2540	47	16	496	1.2	.29
19						0	2480	50	81	443	1.1	1.0
20						.10	2250	54	614	377	1.4	2.5
21						.30	1760	47	1060	318	1.7	3.1
22						.60	1350	48	1240	280	5.2	3.8
23						.50	1150	48	1230	327	.66	4.5
24						1.4	980	50	1100	401	102	2.5
25						1.3	900	55	953	362	94	1.8
26						.80	830	61	796	289	79	1.6
27						.60	780	58	728	252	74	1.4
28						.40	730	56	576	200	70	1.6
29					---	.30	650	54	1080	147	58	3.8
30					---	.30	576	51	1510	107	45	13
31		---			---	.20	---	49	---	92	31	---
TOTAL	0	0	0	0	0	6.80	24534.70	4369	11342.5	35474	1247.5	92.32
MEAN	0	0	0	0	0	.22	818	141	378	1144	40.2	3.08
MAX	0	0	0	0	0	1.4	2540	576	1510	3440	102	21
MIN	0	0	0	0	0	0	.20	47	7.9	92	1.1	.01
AC-FT	0	0	0	0	0	13	48660	8670	22500	70360	2470	183
CAL YR 1974	TOTAL	9022.87	MEAN	24.7	MAX	556	MIN	0	AC-FT	17900		
WTR YR 1975	TOTAL	77066.82	MEAN	211	MAX	3440	MIN	0	AC-FT	152900		

PEAK DISCHARGE (BASE, 300 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-18	0500	15.19	2,570	7-4	0300	19.16	3,500
6-22	2100	8.76	1,270	7-24	1900	3.14	423

05054000 RED RIVER OF THE NORTH AT FARGO, N. DAK.

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

DRAINAGE AREA.--6,800 mi² (17,600 km²), 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.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 861.8 ft (262.68 m) above mean sea level. 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.

AVERAGE DISCHARGE (UNADJUSTED).--74 years, 550 ft³/s (15.58 m³/s), 398,500 acre-ft/yr (491 hm³/yr); median of yearly mean discharges, 440 ft³/s (12.5 m³/s) 319,000 acre-ft/yr (390 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 13,200 ft³/s (374 m³/s) July 4, gage height, 33.26 ft (10.138 m); minimum discharge, 104 ft³/s (2.95 m³/s) Nov. 27, gage height, 13.63 ft (4.154 m).

Period of record: Maximum discharge, 25,300 ft³/s (716 m³/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.

Flood of Apr. 7, 1897 reached a stage of 39.1 ft (11.92 m) present datum, discharge, 25,000 ft³/s (708 m³/s) at site 1.5 mi (2.4 km) downstream.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft (17.4 hm³) at elevation 1,070 ft (326.136 m) above mean sea level, adjustment of 1912; Lake Traverse, capacity, 137,000 acre-ft (169 hm³), 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 diversion by cities of Fargo and Moorhead. Records of chemical analyses and water temperatures for the water year 1975 are published in Section 2 of this report.

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

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	298	365	238	170	210	270	510	2900	1120	10600	1050	597
2	302	342	233	168	210	280	510	2600	1100	11900	980	481
3	302	330	213	168	210	280	510	2200	1080	12800	920	468
4	336	329	204	164	210	280	515	2070	1070	13100	846	468
5	318	313	195	164	210	280	520	1850	1060	13100	798	468
6	290	296	195	162	211	280	525	1680	1070	12500	696	468
7	268	290	195	162	260	280	530	1560	1050	11600	668	468
8	253	290	195	160	285	280	555	1480	1000	10600	654	468
9	253	290	190	155	290	280	570	1400	1000	9450	633	468
10	274	285	164	152	290	280	580	1340	1000	8100	619	468
11	336	285	148	145	290	285	718	1300	995	6800	626	456
12	365	274	152	140	290	290	959	1270	1000	5650	640	456
13	353	274	186	135	290	300	1610	1230	995	4850	640	456
14	330	268	200	130	288	305	2000	1250	986	4300	647	450
15	308	268	204	125	288	320	3500	1220	986	3930	675	443
16	290	213	204	120	285	355	3750	1210	1000	3700	675	443
17	295	186	200	230	285	370	4950	1210	1040	3400	675	443
18	302	200	190	260	285	380	6600	1260	1040	2500	675	462
19	308	324	182	260	285	385	8350	1270	1200	1850	696	413
20	308	359	172	250	285	388	8370	1440	2790	1730	734	382
21	308	284	172	240	285	419	8380	1370	3970	1610	710	382
22	296	263	170	235	282	475	7500	1310	4440	1520	696	382
23	280	285	170	230	282	494	6250	1290	4490	1460	710	382
24	268	213	170	220	280	549	5090	1270	4500	1400	720	382
25	268	190	170	215	280	577	4500	1260	4750	1320	730	382
26	268	148	170	215	280	580	3980	1260	4900	1280	742	371
27	268	111	170	215	280	590	3800	1190	4750	1250	742	388
28	268	114	170	210	270	580	3650	1180	4360	1210	696	406
29	280	172	170	210	---	560	3450	1170	5800	1140	570	400
30	280	223	170	210	---	540	3300	1160	8350	1060	556	406
31	308	---	170	210	---	520	---	1150	---	1020	528	---
TOTAL	9181	7784	5732	5830	7496	12052	96032	45350	72892	166730	21947	13017
MEAN	296	259	185	188	268	389	3201	1463	2430	5378	708	434
MAX	365	365	238	260	290	590	8380	2900	8350	13100	1050	507
MIN	253	111	148	120	210	270	510	1150	986	1020	528	371
AC-FT	18210	15440	11370	11560	14870	23910	190500	89950	144600	330700	43530	25820
(+)	870	822	799	789	712	790	763	823	880	1033	1036	851
MEAN*	310	273	198	201	281	402	3214	1476	2445	5395	724	448
AC-FT*	19060	16240	12170	12360	15610	24720	191200	90760	145500	331700	44520	26660

		OBSERVED						ADJUSTED						
CAL YR 1974	TOTAL	219999	MEAN	603	MAX	4040	MIN	111	AC-FT	436400	MEAN	617	AC-FT	446500
WTR YR 1975	TOTAL	464043	MEAN	1271	MAX	13100	MIN	111	AC-FT	920400	MEAN	1285	AC-FT	930300

+ Diversions in acre-feet by cities of Fargo and Moorhead.

* Adjusted for diversion by cities of Fargo and Moorhead.

RED RIVER OF THE NORTH BASIN

05054500 SHEYENNE RIVER ABOVE HARVEY, N. DAK.

LOCATION.--Lat 47°42'10", long 99°56'55", in SW¼SE¼ sec.24, T.149 N., R.73 W., Wells County, on right bank just downstream from county road, 2 mi (3 km) upstream from unnamed tributary and 4.5 mi (7.2 km) south of Harvey.

DRAINAGE AREA.--424 mi² (1,098 km²), of which about 270 mi² (700 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,547.30 ft (471.617 m) above mean sea level.

AVERAGE DISCHARGE.--20 years, 5.97 ft³/s (0.169 m³/s), 4,330 acre-ft/yr (5.34 hm³/yr); median of yearly mean discharges, 4.2 ft³/s (0.12 m³/s), 3,000 acre-ft/yr (3.7 hm³/yr).

EXTREMES.--Current year: Maximum discharge, about 160 ft³/s (4.53 m³/s) about Apr. 29, gage height unknown. minimum, no flow Jan. 12 - Feb. 18.

Period of record: Maximum discharge, 410 ft³/s (11.6 m³/s), Mar. 15, 1966, gage height, 9.21 ft (2.807 m); maximum gage height, 10.30 ft (3.139 m) Apr. 1, 1971, backwater from ice; no flow at times most years.

REMARKS.--Records fair. Records of chemical analyses for the 1975 water year are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.81	4.2	1.2	.50	0	2.0	24	120	16	16	2.7	.81
2	.81	3.6	1.2	.50	0	2.0	28	100	13	20	2.3	1.0
3	.91	2.4	1.2	.50	0	2.0	33	90	11	34	2.0	1.0
4	.86	2.4	1.2	.50	0	2.0	35	80	9.8	38	1.6	1.0
5	1.1	2.1	1.2	.50	0	2.0	35	75	10	28	1.5	1.1
6	1.6	2.4	1.2	.50	0	1.0	35	70	11	23	1.4	1.2
7	1.7	2.5	1.2	.50	0	1.0	35	70	10	24	1.5	1.4
8	1.5	2.4	1.2	.50	0	1.0	40	65	9.3	26	1.4	1.5
9	1.4	2.1	1.4	.50	0	1.0	45	65	15	30	1.0	1.4
10	1.2	2.0	1.4	.50	0	1.0	45	63	25	32	.91	.96
11	2.0	1.7	1.4	.50	0	1.0	50	64	23	31	1.4	.71
12	4.4	1.5	1.2	0	0	1.0	65	59	20	30	1.1	.59
13	.96	1.4	1.2	0	0	4.0	80	56	17	28	.81	.59
14	.86	1.4	1.2	0	0	6.0	90	53	14	25	.59	.53
15	.81	1.4	1.2	0	0	8.0	100	51	13	23	.76	.41
16	.96	1.4	1.2	0	0	10	120	46	12	21	.59	.53
17	1.4	1.5	1.2	0	0	20	140	38	12	19	.59	.76
18	1.4	1.6	1.2	0	0	28	130	27	13	18	.67	2.4
19	1.4	1.6	1.2	0	1.0	36	110	20	12	16	.67	7.4
20	1.3	1.7	1.0	0	1.0	36	90	17	13	14	.59	7.5
21	1.4	1.7	1.0	0	1.0	32	80	16	12	13	.71	5.4
22	1.4	1.6	1.0	0	1.0	28	70	21	14	11	.71	3.5
23	1.2	1.7	.80	0	1.0	24	60	34	15	11	.81	1.8
24	1.3	1.7	.80	0	1.0	20	50	42	15	9.8	.71	1.5
25	1.2	1.6	.80	0	1.0	20	45	39	19	8.6	.67	1.0
26	1.3	1.6	.80	0	1.0	20	50	36	20	7.8	.67	1.0
27	1.4	1.8	.80	0	2.0	20	80	34	17	6.6	.76	1.1
28	1.4	1.9	.80	0	2.0	20	120	32	16	5.5	.67	1.6
29	1.5	1.6	.50	0	---	20	150	28	13	4.7	.59	1.4
30	1.5	1.2	.50	0	---	20	140	24	19	3.7	.76	1.3
31	1.9	---	.50	0	---	20	---	20	---	3.0	1.1	---
TOTAL	42.88	57.7	32.70	5.50	12.0	409.0	2175	1555	439.1	580.7	32.24	52.39
MEAN	1.38	1.92	1.05	.18	.43	13.2	72.5	50.2	14.6	18.7	1.04	1.75
MAX	4.4	4.2	1.4	.50	2.0	36	150	120	25	38	2.7	7.5
MIN	.81	1.2	.50	0	0	1.0	24	16	9.3	3.0	.59	.41
AC-FT	85	114	65	11	24	811	4310	3080	871	1150	64	104

CAL YR 1974 TOTAL 3590.61 MEAN 9.84 MAX 158 MIN 0 AC-FT 7120
WTR YR 1975 TOTAL 5394.21 MEAN 14.8 MAX 150 MIN 0 AC-FT 10700

PEAK DISCHARGE (BASE, 25 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
3-19	--	--	40	6-10	1200	6.06	28
4-17	Unknown	Unknown	About 140	7-4	0300	6.77	43
4-29	Unknown	Unknown	About 160	7-10	0800	6.42	32
5-24	1300	6.80	43				

05055520 BIG COULEE NEAR FORT TOTTEN, N. DAK.

LOCATION.--Lat 47°52'57", long 98°58'02", in NE¼SW¼ sec.22, T.151 N., R.65 W., Benson County, on right bank 30 ft (9 m) upstream from culvert on county highway, 7 mi (11 km) south of Fort Totten.

DRAINAGE AREA.--23.2 mi² (60.1 km²) of which about 15.5 mi² (40.1 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1965 to September 1975 (discontinued).

GAGE.--Water-stage recorder. Concrete culvert control. Altitude of gage is 1,480 ft (451 m), from topographic map.

AVERAGE DISCHARGE.--10 years, 2.10 ft³/s (0.0595 m³/s), 1,520 acre-ft/yr (1.87 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 79 ft³/s (2.24 m³/s) Apr. 15, gage height, 3.96 ft (1.207 m); minimum, 0.15 ft³/s (0.004 m³/s) July 29, gage height, 0.91 ft (0.277 m).
Period of record: Maximum discharge, 270 ft³/s (7.65 m³/s) Apr. 10, 1969, gage height, 8.46 ft (2.579 m), from floodmark; no flow Dec. 25-29, 1965.

REMARKS.--Records good, except those for the periods of ice effect and no gage height, which are fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.35	1.8	.44	.40	.40	.30	.70	6.5	2.7	2.7	.26	.44
2	.35	1.1	.47	.38	.40	.30	.65	4.6	2.9	3.7	.21	.42
3	.35	.89	.53	.40	.40	.30	.60	6.1	2.6	2.7	.21	.40
4	.41	.89	.50	.40	.40	.30	.60	6.2	2.6	1.9	.21	.40
5	.53	.89	.47	.45	.40	.30	.55	6.4	2.3	1.4	.21	.38
6	.68	.85	.44	.50	.40	.30	.50	6.5	2.1	1.0	.21	.38
7	.59	.93	.44	.47	.40	.30	.50	6.6	1.8	.89	.23	.35
8	.59	1.0	.41	.45	.40	.30	1.0	6.8	1.8	.71	.35	.35
9	.50	1.1	.44	.45	.40	.30	5.0	6.3	5.6	.74	.21	.35
10	.50	.97	.47	.44	.40	.25	10	6.8	11	.68	.23	.34
11	.50	.97	.44	.44	.38	.25	25	6.8	11	.85	.21	.32
12	.47	.93	.44	.44	.38	.25	34	4.2	7.4	.50	.56	.29
13	.50	.89	.44	.44	.38	.25	32	4.2	4.9	.38	.23	.28
14	.62	.81	.44	.44	.38	.25	28	6.3	3.9	.35	.23	.26
15	.53	.74	.47	.44	.38	.50	62	8.0	3.7	.32	.32	.26
16	.53	.65	.44	.44	.38	1.0	47	7.0	4.2	.29	.29	.26
17	.53	.65	.41	.44	.38	5.0	28	6.8	3.7	.35	.23	.26
18	.56	.71	.44	.44	.35	8.0	18	6.1	3.1	.26	.21	.97
19	.53	.74	.44	.44	.35	10	15	5.3	3.0	.21	.29	.95
20	.56	.71	.44	.44	.35	9.3	14	4.9	2.6	.21	.29	.80
21	.56	.68	.41	.44	.35	5.1	13	4.2	2.2	.26	.32	.75
22	.56	.74	.47	.44	.35	4.5	12	3.7	8.1	.23	.29	.70
23	.56	.65	.44	.44	.35	4.0	9.3	12	10	.32	.29	.60
24	.56	.65	.44	.44	.35	3.0	9.1	23	7.6	.26	.29	.50
25	.56	.56	.44	.44	.35	2.0	28	16	3.9	.21	.23	.40
26	.56	.56	.47	.43	.35	1.0	34	9.9	2.3	.23	.21	.35
27	.59	.59	.47	.43	.35	.95	23	7.4	2.5	.19	.21	.30
28	.59	.56	.47	.43	.30	.90	14	5.7	1.4	.21	.32	.30
29	.59	.47	.41	.42	---	.85	11	4.6	1.4	.19	1.4	.28
30	.62	.44	.41	.40	---	.80	9.1	3.7	2.6	.15	.68	.28
31	1.4	---	.41	.40	---	.75	---	3.1	---	.19	.47	---
TOTAL	17.33	24.12	13.85	13.45	10.46	61.60	485.60	215.7	124.9	22.58	9.90	12.92
MEAN	.56	.80	.45	.43	.37	1.99	16.2	6.96	4.16	.73	.32	.43
MAX	1.4	1.8	.53	.50	.40	10	62	23	11	3.7	1.4	.97
MIN	.35	.44	.41	.38	.30	.25	.50	3.1	1.4	.15	.21	.26
AC-FT	34	48	27	27	21	122	963	428	248	45	20	26
CAL YR 1974 TOTAL	1052.29		MEAN 2.88	MAX 100	MIN .07	AC-FT 2090						
WTR YR 1975 TOTAL	1012.41		MEAN 2.77	MAX 62	MIN .15	AC-FT 2010						

PEAK DISCHARGE (BASE, 10 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
3-20	--	--	12	4-25	1300	3.02	46
4-12	--	--	67	5-23	2400	2.44	27
4-15	1530	3.96	79	6-22	1700	1.79	11

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, on left bank on downstream side of county highway bridge, 3.3 mi (5.3 km) south of Warwick.

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

AVERAGE DISCHARGE.--26 years, 52.9 ft³/s (1.498 m³/s), 38,330 acre-ft/yr (47.3 hm³/yr); median of yearly mean discharges, 50 ft³/s (1.42 m³/s), 36,200 acre-ft/yr (45 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,800 ft³/s (51.0 m³/s) Apr. 21, gage height, 6.16 ft (1.878 m), backwater from ice; minimum, 0.64 ft³/s (0.018 m³/s) Oct. 4, gage height, 2.07 ft (0.631 m).
Period of record: Maximum discharge, 4,660 ft³/s (132 m³/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.

Aug. 29	1.1	Nov. 20	1.4	May 8	1.6
Sept. 26	1.0	Jan. 6	1.5	July 17	0.9
Oct. 23	1.1	Apr. 19	1.4	Aug. 15	2.2

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.80	16	6.5	6.5	5.0	6.0	60	1050	92	46	16	9.2
2	1.1	22	6.0	6.5	5.0	6.0	51	1140	80	50	14	7.7
3	.96	19	6.0	6.5	5.0	6.0	44	1120	79	48	14	6.0
4	.96	17	5.5	6.5	5.0	6.0	39	1070	82	43	14	6.0
5	1.5	16	5.0	6.5	5.0	6.0	34	843	66	43	14	13
6	2.2	14	5.0	6.5	5.0	6.5	32	664	72	46	13	15
7	2.2	14	5.0	7.1	5.0	7.1	29	522	54	62	13	13
8	2.4	14	5.0	7.1	5.0	7.1	28	411	48	79	10	12
9	3.5	14	5.0	7.1	5.0	7.1	26	444	58	85	7.7	10
10	4.5	14	5.0	7.1	5.0	7.1	26	391	87	84	6.5	9.2
11	4.5	14	5.0	7.1	5.0	7.1	39	333	111	82	5.0	7.7
12	5.5	14	5.0	5.0	5.0	7.1	77	296	103	74	5.5	7.7
13	5.5	14	5.0	5.0	5.0	7.1	110	266	74	68	4.1	7.7
14	5.5	14	4.5	6.0	5.0	7.1	290	245	64	62	4.1	7.7
15	5.0	13	4.5	6.0	5.0	11	677	230	64	58	4.5	8.4
16	4.5	12	5.0	6.0	5.5	22	1100	206	47	53	5.0	7.7
17	4.5	11	5.0	5.5	6.0	36	1200	186	51	47	5.0	7.7
18	4.5	9.2	5.0	5.0	6.5	74	1270	182	51	43	4.5	10
19	4.5	8.4	5.0	5.0	6.5	127	1380	178	50	35	4.1	7.1
20	4.5	8.4	5.0	5.0	7.1	158	1640	170	47	32	4.1	6.5
21	4.1	8.4	5.0	6.0	7.1	150	1780	158	47	29	4.1	7.7
22	4.1	8.4	6.0	5.5	7.1	142	1640	142	62	28	3.8	11
23	4.1	8.4	6.0	5.5	7.7	103	1150	150	90	28	3.5	9.2
24	4.1	8.4	6.5	5.5	7.1	74	787	154	94	28	2.9	7.7
25	4.1	7.7	6.5	6.0	6.5	72	612	178	82	26	1.6	6.5
26	4.5	7.7	10	6.0	6.0	106	502	162	74	25	1.3	5.0
27	4.5	7.7	7.1	5.5	6.5	119	424	138	53	25	1.1	4.5
28	4.1	7.1	7.1	5.5	6.5	100	450	121	50	22	1.3	4.1
29	3.8	7.1	6.5	5.5	---	77	574	106	46	20	2.2	3.8
30	4.1	6.5	6.5	5.5	---	70	766	100	46	19	3.5	3.2
31	5.5	---	6.5	5.0	---	66	---	97	---	16	4.5	---
TOTAL	115.62	355.4	176.7	184.5	161.1	1600.3	16837	11453	2024	1406	197.9	242.0
MEAN	3.73	11.8	5.70	5.95	5.75	51.6	561	369	67.5	45.4	6.38	8.07
MAX	5.5	22	10	7.1	7.7	158	1780	1140	111	85	16	15
MIN	.80	6.5	4.5	5.0	5.0	6.0	26	97	46	16	1.1	3.2
AC-FT	229	705	350	366	320	3170	33400	22720	4010	2790	393	480
CAL YR 1974	TOTAL	33378.44	MEAN	91.4	MAX	2000	MIN	.32	AC-FT	66210		
WTR YR 1975	TOTAL	34753.52	MEAN	95.2	MAX	1780	MIN	.80	AC-FT	68930		

05056100 MAUVAIS COULEE NEAR CANDO, N. DAK.

LOCATION.--Lat 48°26'53", long 99°06'08", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.1, T.157 N., R.66 W., Towner County, 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 mi² (1,000 km²), of which about 10 mi² (25 km²) 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) above mean sea level (from topographic map). Prior to July 2, 1957, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--19 years, 18.3 ft³/s (0.518 m³/s), 13,260 acre-ft/yr (16.3 hm³/yr); median of yearly mean discharges, 13 ft³/s (0.37 m³/s), 9,400 acre-ft/yr (12 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 490 ft³/s (13.9 m³/s) May 3, gage height, 6.47 ft (1.972 m); no flow for several months.
Period of record: Maximum discharge, 2,500 ft³/s (70.8 m³/s) Apr. 14, 1969, gage height, 11.16 ft (3.402 m); no flow at times each year.
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.

REMARKS.--Records good, except those for periods of ice effect or no gage height record, which are fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.01	.01	.01			0	347	12	6.9	.14	.78
2	.01	.01	.01	.01			0	453	10	6.9	.12	.56
3	.01	.01	.01	.01			0	485	9.5	6.3	.10	.38
4	.01	.01	.01	.01			0	474	10	6.1	.09	.30
5	.02	.01	.01	.01			0	467	9.0	6.1	.09	.22
6	.02	.01	.01	.01			0	384	8.5	5.8	.09	.30
7	.01	.01	.01	.01			0	299	8.2	5.6	.08	.18
8	.01	.01	.01	.01			.01	238	8.0	5.0	.09	.26
9	.01	.02	.01	.01			.01	164	8.5	4.5	.09	.12
10	.01	.03	.01	.01			.05	140	9.0	4.0	.07	.14
11	.01	.03	.01	0			.10	108	8.0	3.8	.09	.14
12	.01	.02	.01	0			.20	91	7.7	2.8	.09	.11
13	.01	.02	.01	0			.50	81	7.7	2.6	.08	.12
14	.04	.02	.01	0			50	76	7.7	2.4	.08	.12
15	.03	.02	.01	0			90	68	7.7	2.4	.10	.14
16	.02	.02	.01	0			70	57	7.7	2.8	.14	.10
17	.01	.02	.01	0			130	48	7.4	2.6	.14	.12
18	.01	.02	.01	0			380	39	7.4	2.2	.14	.34
19	.01	.02	.01	0			375	32	7.4	1.7	.18	.18
20	.01	.01	.01	0			330	28	7.4	1.4	.22	.12
21	.01	.01	.01	0			290	25	7.4	1.1	.30	.10
22	.01	.01	.01	0			280	22	7.7	.88	.34	.09
23	.01	.01	.01	0			270	20	8.0	.78	.62	.14
24	.01	.01	.01	0			230	22	7.7	.62	.62	.12
25	.01	.01	.01	0			200	25	7.4	.50	.56	.10
26	.01	.01	.01	0			170	22	7.2	.38	.62	.10
27	.01	.01	.01	0			150	20	6.9	.30	.50	.10
28	.01	.01	.01	0			174	20	6.6	.26	.50	.10
29	.01	.01	.01	0			199	18	6.3	.16	.62	.10
30	.01	.01	.01	0			234	16	6.6	.12	.88	.10
31	.01	---	.01	0			---	14	---	.09	.62	---
TOTAL	.39	.43	.31	.10	0	0	3622.87	4303	240.6	87.09	8.40	5.78
MEAN	.013	.014	.010	.003	0	0	121	139	8.02	2.81	.27	.19
MAX	.04	.03	.01	.01	0	0	380	485	12	6.9	.88	.78
MIN	.01	.01	.01	0	0	0	0	14	6.3	.09	.07	.09
AC-FT	.8	.9	.6	.2	0	0	7190	8530	477	173	17	11

CAL YR 1974 TOTAL 26164.11 MEAN 71.7 MAX 1770 MIN 0 AC-FT 51900
WTR YR 1975 TOTAL 8268.97 MEAN 22.7 MAX 485 MIN 0 AC-FT 16400

PEAK DISCHARGE (BASE, 24 FT³/S).--Apr. 18 (1000) 420 FT³/S (7.63 FT); May 3 (1100) 490 FT³/S (6.47 FT).

RED RIVER OF THE NORTH BASIN

05056200 EDMORE COULEE NEAR EDMORE, N. DAK.

LOCATION.--Lat 48°20'14", long 98°39'33", in NW¼ sec.17, T.156 N., R.62 W., Ramsey County, 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 mi² (989 km²), of which about 100 mi² (259 km²) is probably noncontributing.

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

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

AVERAGE DISCHARGE.--18 years (1957-75) 14.0 ft³/s (0.396 m³/s), 10,100 acre-ft/yr (12.5 hm³/yr); median of yearly mean discharges, 9.6 ft³/s (0.27 m³/s), 7,000 acre-ft/yr (8.6 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 200 ft³/s (5.66 m³/s) April 15, gage height, 4.92 ft (1.500 m), backwater from ice; no flow for several months.
Period of record: Maximum discharge, 890 ft³ (25.2 m³/s) Apr. 17, 1974, gage height, 6.46 ft (1.969 m); maximum gage height, 6.63 ft (2.021 m) Mar. 25, 1966, backwater from ice, no flow for several months each year.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	55	15	3.1	8.5	.04
2							0	60	13	5.3	7.7	.04
3							0	73	12	6.0	7.1	.04
4							0	71	10	6.9	6.4	.04
5							0	64	8.0	11	5.7	.04
6							0	54	6.0	16	5.0	.04
7							0	48	4.0	18	4.0	.04
8							0	39	2.0	15	3.0	.04
9							0	32	4.0	13	2.0	.04
10							5.0	30	3.0	10	1.0	.04
11							20	30	1.0	8.3	.60	.04
12							50	29	.71	6.6	.60	.04
13							90	28	.44	5.3	.59	.01
14							130	28	.38	4.1	.50	0
15							195	28	.28	3.4	.38	0
16							190	27	.26	3.1	.28	0
17							180	27	.18	3.0	.24	0
18							170	26	.18	3.7	.16	0
19							155	26	.16	4.6	.10	0
20							145	26	.16	5.8	.08	0
21							140	25	.16	7.1	.06	0
22							135	26	.36	8.2	.04	0
23							124	26	.68	9.5	.04	0
24							113	25	.98	10	.04	0
25							101	24	1.0	11	.04	0
26							83	23	.90	11	.04	0
27							79	22	.65	11	.03	0
28							72	20	.82	11	.03	0
29					---		71	20	.74	11	.08	0
30					---		60	18	1.3	10	.05	0
31		---			---		---	16	---	9.1	.04	---
TOTAL	0	0	0	0	0	0	2308.0	1046	88.34	261.1	54.42	.49
MEAN	0	0	0	0	0	0	76.9	33.7	2.94	8.42	1.76	.016
MAX	0	0	0	0	0	0	195	73	15	18	8.5	.04
MIN	0	0	0	0	0	0	0	16	.16	3.0	.03	0
AC-FT	0	0	0	0	0	0	4580	2070	175	518	108	1.0
CAL YR 1974	TOTAL	17418.39	MEAN	47.7	MAX	860	MIN	0	AC-FT	34550		
WTR YR 1975	TOTAL	3758.35	MEAN	10.3	MAX	195	MIN	0	AC-FT	7450		

PEAK DISCHARGE (BASE, 50 FT³/S).--Apr. 15, 200 FT³/S.

05056400 BIG COULEE NEAR CHURCHS FERRY, N. DAK.

LOCATION.--Lat 48°10'40", long 99°13'15", in NW¼NW¼ sec.12, T.154 N., R.67 W., Benson County, 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 mi² (6,500 km²), approximately, of which about 690 mi² (1,790 km²) 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) above mean sea level. 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 m) higher.

AVERAGE DISCHARGE.--25 years, 37.4 ft³/s (1.059 m³/s), 27,100 acre-ft/yr (33.4 hm³/yr); median of yearly mean discharges, 4.2 ft³/s (0.12 m³/s), 3,000 acre-ft/yr (3.7 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 444 ft³/s (12.6 m³/s) May 6, gage height, 3.88 ft (1.183 m); no flow for many days.

Period of record: Maximum discharge, 1,230 ft³/s (34.8 m³/s) June 10, 1974; gage height, 7.06 ft (2.152 m); no flow at times each year.

REMARKS.--Records fair, except those for the periods of ice effect and no gage height record which are poor. Flow affected by many lakes on the mainstem and tributaries. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	51	30	7.5		0	1.0	351	290	263	75	.68
2	104	41	30	7.5		0	1.0	372	284	277	74	.75
3	92	39	29	7.5		0	1.0	392	286	266	74	.34
4	100	45	29	7.2		0	2.0	405	272	261	72	.20
5	97	52	28	7.2		0	5.0	421	263	248	68	.13
6	97	55	28	7.1		0	5.5	434	264	241	56	.14
7	85	58	27	7.1		0	6.0	432	272	230	50	.14
8	85	60	27	7.1		0	7.0	417	266	225	52	.17
9	82	60	27	7.1		0	8.0	407	264	216	7.7	.14
10	81	60	27	7.0		0	9.0	399	284	212	2.6	.12
11	82	60	27	6.5		0	10	396	275	207	1.7	.11
12	78	58	22	6.0		0	11	385	268	194	1.2	.11
13	63	58	18	5.5		0	12	376	263	170	.34	.11
14	74	58	15	5.0		1.0	13	380	259	162	.24	.11
15	65	58	14	4.5		1.5	16	376	263	156	.24	.11
16	62	56	12	4.0		3.0	14	369	261	151	.13	.12
17	62	56	10	3.5		2.8	10	363	261	143	.12	.12
18	60	55	9.5	3.0		2.5	50	356	255	132	.12	.34
19	63	55	9.2	2.5		2.5	150	344	261	119	.13	.13
20	55	53	9.0	2.0		2.2	75	345	248	119	.12	.11
21	43	52	8.8	1.5		2.1	70	336	237	110	.12	.12
22	54	50	8.5	1.0		2.0	85	329	250	106	.13	.12
23	48	49	8.3	.50		2.0	210	333	254	100	.14	.12
24	47	44	8.2	.10		2.0	311	327	254	100	.12	.13
25	47	39	8.2	0		2.0	300	313	245	100	.11	.14
26	45	35	8.0	0		1.9	327	304	221	95	.11	.14
27	44	32	8.0	0		1.7	349	306	214	90	.11	.13
28	44	31	8.0	0		1.5	374	308	209	85	.06	.13
29	44	31	8.0	0	---	1.5	394	299	209	80	1.3	.13
30	43	30	7.8	0	---	1.5	378	295	237	74	1.6	.11
31	45	---	7.5	0	---	1.2	---	293	---	72	1.1	---
TOTAL	2099	1481	517.0	117.90	0	34.9	3204.5	11163	7689	5004	540.54	5.45
MEAN	67.7	49.4	16.7	3.80	0	1.13	107	360	256	161	17.4	.18
MAX	108	60	30	7.5	0	3.0	394	434	290	277	75	.75
MIN	43	30	7.5	0	0	0	1.0	293	209	72	.06	.11
AC-FT	4160	2940	1030	234	0	69	6360	22140	15250	9930	1070	11
CAL YR 1974	TOTAL	80872.00	MEAN	222	MAX	1220	MIN	0	AC-FT	160400		
WTR YR 1975	TOTAL	31856.29	MEAN	87.3	MAX	434	MIN	0	AC-FT	63190		

RED RIVER OF THE NORTH BASIN

05056500 DEVILS LAKE NEAR DEVILS LAKE, N. DAK.

LOCATION.--Lat 48°04'00", long 98°56'07", in SW¼ sec.18, T.153 N., R.64 W., Ramsey County, 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 (3.2 km) to the north of the lake.

DRAINAGE AREA.--3,130 mi² (8,110 km²), approximately, of which about 1,000 mi² (2,590 km²) 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.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.72 m) above mean sea level; gage readings have been reduced to elevations above mean sea level. 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.

EXTREMES.--Current year: Maximum elevation, 1,424.84 ft (434.291 m) July 7; minimum, 1,422.82 ft (433.676 m) Oct. 29, 30.

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.

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.

REMARKS.--Elevation at gage frequently affected by wind. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1913: Drainage area.

MONTHEND ELEVATION, IN FEET, AT 2400, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Oct. 31..... 1,422.82	Jan. 31..... 1,422.89	Apr. 30..... 1,423.80	July 31..... --
Nov. 30..... 1,422.86	Feb. 28..... 1,422.89	May 31..... 1,424.50	Aug. 31..... 1,423.97
Dec. 31..... 1,422.89	Mar. 31..... 1,422.90	June 30..... 1,424.73	Sept. 30..... 1,423.59

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, N. DAK.

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

DRAINAGE AREA.--6,470 mi² (16,760 km²), approximately, of which about 5,200 mi² (13,470 km²) is probably noncontributing, includes 3,800 mi² (9,840 km²) in closed basins.

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

GAGE.--Water-stage recorder. Datum of gage is 1,271.04 ft (387.413 m) above mean sea level, Corps of Engineers benchmark. Prior to Aug. 3, 1950, nonrecording gage at site 150 ft (45.7 m) upstream at same datum.

AVERAGE DISCHARGE.--31 years, 105 ft³/s (2.974 m³/s) 76,070 acre-ft/yr (93.8 hm³/yr); median of yearly mean discharges, 80 ft³/s (2.27 m³/s) 58,000 acre-ft/yr (72 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,490 ft³/s (42.2 m³/s) Apr. 26, gage height, 15.35 ft (4.679 m), backwater from ice; minimum discharge, 3.3 ft³/s (0.093 m³/s) Oct. 1, gage height, 3.75 ft (1.143 m).
Period of record: Maximum discharge, 7,830 ft³/s (222 m³/s) Apr. 17, 1950, gage height, 18.69 ft (5.697 m); no flow at times.

REMARKS.--Records good, except those for the winter period, which are fair. records of chemical analyses and water temperatures for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	24	20	14	9.0	15	250	1240	229	189	44	7.1
2	4.1	27	19	14	10	14	260	1060	208	166	42	6.0
3	4.5	30	18	14	11	13	260	947	192	131	39	5.7
4	5.2	36	18	14	12	13	250	906	180	132	37	5.4
5	7.7	41	17	14	12	13	240	924	170	144	35	7.9
6	8.2	45	16	14	11	13	220	976	161	130	32	8.8
7	7.1	46	16	13	12	13	210	1050	156	119	28	8.2
8	7.6	46	16	13	12	13	200	1100	151	109	27	7.9
9	7.3	46	15	13	13	13	190	1150	149	100	25	8.8
10	7.9	46	15	13	13	13	190	1140	148	92	23	7.1
11	4.6	46	15	13	13	13	260	1070	148	87	19	5.2
12	14	45	14	12	14	13	480	953	155	86	16	4.7
13	14	41	15	12	14	18	590	820	159	92	14	4.9
14	14	40	14	12	14	25	650	725	159	101	13	13
15	15	42	15	12	15	35	680	655	162	105	14	16
16	14	37	15	12	15	45	700	600	167	106	14	15
17	16	38	15	12	15	65	730	560	165	104	13	15
18	16	36	15	12	15	110	810	520	159	98	11	15
19	25	35	15	12	15	160	760	480	148	94	10	12
20	27	34	15	12	16	150	750	439	139	88	9.7	12
21	30	33	15	12	16	200	780	401	134	82	9.7	12
22	30	33	15	13	16	230	880	366	233	78	8.2	11
23	22	31	15	12	16	230	1090	350	289	76	9.1	11
24	19	28	15	12	16	210	1300	353	164	70	9.4	11
25	18	28	15	12	17	200	1420	336	142	65	9.1	10
26	18	26	15	11	17	250	1490	308	143	60	7.9	13
27	16	23	15	11	16	240	1480	289	149	56	7.1	19
28	16	23	15	11	16	220	1460	274	149	52	5.7	23
29	19	22	15	11	---	220	1450	268	150	50	5.7	19
30	20	21	14	10	---	220	1420	263	192	48	8.5	16
31	18	---	14	9.0	---	250	---	248	---	45	7.9	---
TOTAL	459.9	1049	481	381.0	391.0	3237	21450	20771	5050	2955	554.0	330.7
MEAN	14.8	35.0	15.5	12.3	14.0	104	715	670	168	95.3	17.9	11.0
MAX	30	46	20	14	17	250	1490	1240	289	189	44	23
MIN	3.3	21	14	9.0	9.0	13	190	248	134	45	5.7	4.7
AC-FT	912	2080	954	756	776	6420	42550	41200	10020	5860	1100	656
CAL YR 1974	TOTAL	71542.3	MEAN	196	MAX	2440	MIN	2.0	AC-FT	141900		
WTR YR 1975	TOTAL	57109.6	MEAN	156	MAX	1490	MIN	3.3	AC-FT	113300		

PEAK DISCHARGE (BASE, 200 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-26	1500	15.35	1,490	6-22	2300	7.35	392
5-9	1900	11.65	1,160				

RED RIVER OF THE NORTH BASIN

05057200 BALDHILL CREEK NEAR DAZEY, N. DAK.

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

DRAINAGE AREA.--691 mi² (1,790 km²), of which about 340 mi² (880 km²) is probably noncontributing.

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

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

AVERAGE DISCHARGE.--19 years, 14.9 ft³/s (0.422 m³/s) 10,800 acre-ft/yr (13.3 hm³/yr); median of yearly mean discharges, 12 ft³/s (0.34 m³/s), 8,700 acre-ft/yr (11 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 680 ft³/s (19.3 m³/s) Apr. 17, gage height, 7.51 ft (2.289 m), backwater from ice; minimum discharge, 0.26 ft³/s (0.007 m³/s) Feb. 11, gage height, 1.98 ft (0.604 m).
Period of record: Maximum discharge, 2,510 ft³/s (71.1 m³/s) Apr. 11, 1969, gage height, 10.90 ft (3.322 m) backwater from ice; maximum gage height, 11.21 ft (3.417 m) Apr. 10, 1969, backwater from ice; no flow at times.

REMARKS.--Records good. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	5.6	3.0	3.0	.63	1.4	4.9	100	15	83	5.6	4.9
2	1.4	6.0	3.0	2.8	.59	1.5	4.6	99	15	101	4.9	4.1
3	1.4	5.4	3.0	3.0	.63	1.6	4.3	91	15	80	4.3	3.7
4	1.6	4.3	2.8	3.0	.67	1.6	4.1	79	15	71	3.9	3.2
5	2.1	4.1	2.7	3.0	.63	1.8	4.1	65	14	61	3.3	3.2
6	2.5	3.9	2.8	3.0	.59	1.8	4.3	54	13	59	2.7	3.0
7	2.7	3.9	2.8	3.2	.55	1.9	4.9	49	11	58	2.7	3.2
8	2.7	4.1	2.8	3.2	.43	1.8	5.1	47	11	55	2.4	2.8
9	2.7	3.9	2.7	3.2	.34	1.8	5.1	45	13	52	2.1	2.5
10	2.5	3.7	2.7	3.2	.28	1.8	6.3	40	16	52	1.9	2.4
11	2.5	4.1	3.0	2.1	.26	1.8	25	35	15	49	1.7	2.5
12	2.5	3.7	3.0	.97	.31	1.8	90	30	14	44	1.6	2.3
13	2.8	3.5	3.0	.59	.34	1.8	90	45	12	41	1.5	2.0
14	2.8	3.2	3.0	.51	.34	2.2	100	40	12	37	1.4	1.9
15	2.7	3.5	3.2	.51	.37	12	180	35	13	32	1.6	1.9
16	3.2	3.7	3.2	.47	.47	56	380	30	12	29	1.6	1.9
17	2.8	3.9	3.2	.82	.59	45	540	25	12	25	1.6	1.7
18	2.8	3.7	3.3	1.2	.72	30	530	35	12	23	1.6	2.3
19	2.5	3.9	3.2	1.1	.82	20	510	30	12	20	1.7	2.7
20	2.5	3.7	3.0	.97	.87	15	418	25	13	17	1.8	2.8
21	2.5	3.5	3.0	.92	.92	15	300	25	14	16	1.7	3.0
22	2.7	3.5	3.0	.82	.97	18	253	20	28	15	1.8	3.0
23	2.5	3.3	3.2	.77	.87	8.4	145	20	31	15	2.5	3.3
24	2.8	3.5	3.0	.82	.97	5.1	181	20	121	14	2.8	2.8
25	2.8	3.2	3.0	.87	1.0	6.6	142	20	44	12	2.5	2.5
26	2.7	3.2	3.2	.82	1.1	8.1	114	15	31	11	2.0	2.4
27	2.7	3.5	3.3	.77	1.2	8.1	97	15	22	9.6	1.8	3.2
28	2.7	3.3	3.3	.67	1.4	6.9	94	15	17	8.1	1.9	3.3
29	2.8	3.2	3.3	.63	---	5.6	105	15	14	7.5	2.5	3.2
30	3.0	3.2	3.2	.63	---	5.1	105	15	40	5.6	8.4	2.8
31	3.5	---	3.0	.63	---	5.1	---	15	---	4.9	6.3	---
TOTAL	78.8	115.2	93.9	48.19	18.86	294.6	4446.7	1194	627	1107.7	84.1	84.5
MEAN	2.54	3.84	3.03	1.55	.67	9.50	148	38.5	20.9	35.7	2.71	2.82
MAX	3.5	6.0	3.3	3.2	1.4	56	540	100	121	101	8.4	4.9
MIN	1.4	3.2	2.7	.47	.26	1.4	4.1	15	11	4.9	1.4	1.7
AC-FT	156	228	186	96	37	584	8820	2370	1240	2200	167	168
CAL YR 1974 TOTAL	9208.05			MEAN 25.2	MAX 880	MIN .10	AC-FT 18260					
WTR YR 1975 TOTAL	8193.55			MEAN 22.4	MAX 540	MIN .26	AC-FT 16250					

PEAK DISCHARGE (BASE 60 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
3-16	--	--	91	6-24	0700	5.07	313
4-17	--	--	680	7- 1	1500	4.14	138

05057500 LAKE ASHTABULA AT BALDHILL DAM, N. DAK.

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

DRAINAGE AREA.--7,470 mi² (19,300 km²), approximately, of which about 5,560 mi² (14,400 km²) is probably noncontributing, includes 3,800 mi² (9,800 km²) in closed basins.

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

GAGE.--Water-stage recorder. Datum of gage is mean sea level.

EXTREMES.--Current year: Maximum contents, 78,560 acre-ft (96.9 hm³) Apr. 29, elevation, 1,267.39 ft (386.300 m); minimum, 54,530 acre-ft (67.2 hm³) Mar. 15, elevation, 1,263.01 ft (384.965 m).
Period of record: Maximum contents, 91,400 acre-ft (113 hm³) May 14, 1950, elevation, 1,269.46 ft (386.931 m); minimum since reservoir first reached spillway level, 6,660 acre-ft (8.21 hm³) Aug. 11-14, 1950, elevation, 1,245.13 ft (379.516 m).

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 hm³) between invert of outlet conduit, elevation, 1,238.0 ft (377.342 m), and normal pool level, elevation, 1,266.0 ft (385.877 m). Dead storage below elevation 1,238.0 ft (377.342 m), 1,500 acre-ft (1.85 hm³). Maximum pool elevation, 1,273.2 ft (388.07 m), capacity, 116,500 acre-ft (144 hm³). 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 (381.610 m), surmounted by 3 tainter 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.

REVISIONS (WATER YEARS).--WSP 1238: 1950(M). WSP 1728: Drainage area.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30-----	1,264.73	62,980	
Oct. 31-----	1,264.76	63,200	+220
Nov. 30-----	1,264.63	62,220	-980
Dec. 31-----	1,264.24	59,300	-2,920
CAL YR 1974-----	--	--	+910
Jan. 31-----	1,263.76	56,780	-2,520
Feb. 2-----	1,263.29	55,370	-1,410
Mar. 31-----	1,263.68	56,540	+1,170
Apr. 30-----	1,267.25	77,750	+21,210
May 31-----	1,266.19	71,680	-6,070
June 30-----	1,266.44	73,110	+1,430
July 31-----	1,266.17	71,570	-1,540
Aug. 31-----	1,265.39	67,180	-4,390
Sept. 30-----	1,265.02	65,110	-2,070
WTR YR 1975-----	--	--	+2,130

RED RIVER OF THE NORTH BASIN

05058000 SHEYENNE RIVER BELOW BALD HILL DAM, N. DAK.

LOCATION.--Lat 47°01'50", long 98°05'50", in NW¼ sec.18, T.141 N., R.58 W., Barnes County, on right bank 600 ft (183 m) downstream from Baldhill Dam, 8 mi (13 km) northwest of Valley City, and at mile 270.5 (kilometre 435.2).

DRAINAGE AREA.--7,470 mi² (19,350 km²), approximately, of which about 5,560 mi² (14,400 km²) is probably noncontributing, includes 3,800 mi² (9,840 km²) in closed basins.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,200.00 ft (365.760 m) above mean sea level.

AVERAGE DISCHARGE (UNADJUSTED).--26 years, 122 ft³/s (3.455 m³/s), 88,390 acre-ft/yr (109 hm³/yr); median of yearly mean discharges, 92 ft³/s (2.61 m³/s), 66,700 acre-ft/yr (82 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,640 ft³/s (46.4 m³/s) Apr. 29, gage height, 29.20 ft (8.900 m); minimum, 1.7 ft³/s (0.048 m³/s) Aug. 27, gage height, 25.38 ft (7.736 m).
Period of record: Maximum discharge, 4,580 ft³/s (130 m³/s) Apr. 19, 1969, gage height, 35.47 ft (10.811 m); no flow at times in 1950, 1952-53, 1970.

REMARKS.--Records good. Flow completely regulated by Lake Ashtabula (see 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. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	10	40	56	56	60	251	1600	280	45	110	16
2	12	10	40	56	56	60	246	1590	284	48	110	16
3	12	10	40	56	56	60	251	1580	285	152	107	16
4	11	31	40	56	56	60	242	1570	280	214	107	16
5	11	37	40	56	56	60	232	1560	277	212	110	16
6	11	17	47	56	56	60	227	1170	253	200	111	16
7	11	7.7	52	56	56	60	227	1090	181	195	111	17
8	11	12	52	56	56	60	260	985	160	183	110	18
9	11	36	52	56	56	60	302	977	150	159	110	18
10	11	36	52	56	55	60	324	977	151	156	110	18
11	11	37	52	56	55	60	337	985	152	126	112	18
12	11	37	55	56	55	60	337	978	155	105	112	18
13	11	37	56	56	55	60	343	968	154	103	112	19
14	11	37	56	56	55	60	343	986	151	103	83	19
15	11	37	55	56	54	60	343	989	151	100	33	19
16	11	37	55	55	54	60	355	862	153	99	12	19
17	12	37	55	55	54	60	394	757	159	98	12	19
18	12	38	55	55	54	60	602	747	161	98	14	19
19	12	38	55	55	54	57	890	683	160	99	15	15
20	11	38	55	55	56	57	1040	685	162	96	13	19
21	9.8	38	55	55	57	57	957	670	167	98	13	19
22	10	38	55	55	59	57	870	526	167	98	13	19
23	10	38	55	55	59	56	1090	442	167	98	13	20
24	10	38	55	55	59	53	1090	328	273	100	12	20
25	10	39	56	55	59	55	1090	312	469	100	12	20
26	10	39	56	55	60	55	1260	312	453	100	12	20
27	10	39	56	55	60	55	1420	299	439	103	7.8	20
28	10	39	56	55	60	89	1510	280	435	101	6.1	20
29	11	39	56	55	---	128	1620	283	294	101	11	21
30	11	39	56	55	---	128	1600	278	99	107	15	23
31	10	---	56	56	---	189	---	275	---	107	15	---
TOTAL	337.8	965.7	1616	1722	1578	2116	20053	25744	6822	3704	1743.9	557
MEAN	10.9	32.2	52.1	55.5	56.4	68.3	668	830	227	119	56.3	18.6
MAX	12	39	56	56	60	189	1620	1600	469	214	112	23
MIN	9.8	7.7	40	55	54	53	227	275	99	45	6.1	16
AC-FT	670	1920	3210	3420	3130	4200	39780	51060	13530	7350	3460	1100
CAL YR 1974	TOTAL	2438.1	MEAN 226	MAX 1930	MIN 7.7	AC-FT 163500						
WTR YR 1975	TOTAL	66959.4	MEAN 183	MAX 1620	MIN 6.1	AC-FT 132800						

05058500 SHEYENNE RIVER AT VALLEY CITY, N. DAK.

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 (kilometre 407.1).

DRAINAGE AREA.--7,810 mi² (20,230 km²), approximately, of which about 5,700 mi² (14,760 km²) is probably noncontributing, includes 3,800 mi² (9,840 km²) in closed basins.

PERIOD OF RECORD.--March to August 1919, March to June 1938, August 1938 to current year. 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) above mean sea level. 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 ft³/s (3.512 m³/s) 89,840 acre-ft/yr (111 hm³/yr); median of yearly mean discharges, 97 ft³/s (2.75 m³/s), 70,300 acre-ft/yr (87 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,960 ft³/s (55.5 m³/s) June 30, gage height, 10.27 ft (3.130 m); minimum, 6.3 ft³/s (0.18 m³/s) Aug. 21, gage height, 2.70 ft (0.823 m).
Period of record: Maximum discharge, 4,580 ft³/s (130 m³/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.

REMARKS.--Records good. Flow regulated by Lake Ashtabula 13 mi (21 km) upstream (see station 05057500). Small diversions above station for municipal supply. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

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

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	27	44	57	55	61	280	1840	268	401	128	16
2	12	19	44	57	55	61	282	1820	270	201	114	14
3	12	16	43	57	55	61	280	1810	268	90	113	17
4	17	14	44	57	55	63	280	1790	276	226	113	18
5	14	24	44	57	49	61	260	1780	269	254	111	19
6	15	35	43	57	59	61	252	1720	264	240	109	18
7	11	32	51	57	55	61	250	1240	178	323	111	19
8	11	27	54	57	59	59	262	936	93	278	112	18
9	8.4	31	58	59	63	63	410	936	141	148	106	18
10	8.4	40	57	57	63	63	350	930	141	230	108	19
11	7.8	45	57	44	59	63	378	927	139	212	105	19
12	7.8	43	57	50	61	63	385	930	139	159	102	19
13	7.7	43	59	50	59	63	402	930	159	141	99	19
14	11	41	57	52	59	67	443	939	151	135	98	18
15	12	40	57	52	59	75	605	936	147	129	63	21
16	12	40	57	55	57	87	680	879	147	128	25	23
17	13	40	57	55	57	95	1020	700	144	122	13	22
18	13	40	57	55	57	81	858	700	143	122	8.5	29
19	14	40	59	57	59	77	879	756	173	118	8.8	29
20	13	40	59	57	57	69	1050	897	192	115	8.4	25
21	13	40	55	51	59	65	1070	927	163	116	6.7	22
22	13	40	57	51	59	63	798	807	154	168	7.1	22
23	12	40	57	61	61	63	1070	795	144	177	16	21
24	13	40	55	55	61	55	1110	365	285	129	14	18
25	13	42	55	53	61	61	1110	325	480	121	14	18
26	13	43	57	55	61	61	1170	320	417	123	12	19
27	14	43	57	53	63	61	1540	315	395	120	12	24
28	16	43	57	51	63	67	1610	295	351	116	12	23
29	16	43	57	55	---	119	1850	280	422	116	15	23
30	15	43	57	53	---	131	1850	272	1130	115	15	19
31	24	---	57	51	---	151	---	270	---	118	15	---
TOTAL	395.1	1094	1679	1688	1640	2251	22784	28367	7643	5191	1794.5	609
MEAN	12.7	36.5	54.2	54.5	58.6	72.6	759	915	255	167	57.9	20.3
MAX	24	45	59	61	63	151	1850	1840	1130	401	128	29
MIN	7.7	14	43	44	49	55	250	270	93	90	6.7	14
AC-FT	784	2170	3330	3350	3250	4460	45190	56270	15160	10300	3560	1210
CAL YR 1974	TOTAL	87848.3	MEAN	241	MAX	2160	MIN	7.7	AC-FT	174200		
WTR YR 1975	TOTAL	75135.6	MEAN	206	MAX	1850	MIN	6.7	AC-FT	149000		

RED RIVER OF THE NORTH BASIN

05058700 SHEYENNE RIVER AT LISBON, N. DAK.

LOCATION.--Lat 46°26'49", long 97°40'44", on line between secs.1 and 2, T.134 N., R.56 W., Ransom County, 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 (kilometre 260.8).

DRAINAGE AREA.--8,190 mi² (21,210 km²), approximately, of which about 5,700 mi² (14,760 km²), is probably noncontributing, includes 3,800 mi² (9,840 km²) in closed basins.

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

GAGE.--Water-stage recorder. Datum of gage is 1,066.46 ft (325.057 m) above mean sea level.

AVERAGE DISCHARGE.--19 years, 152 ft³/s (4.305 m³/s), 110,100 acre-ft/yr (136 hm³/yr); median of yearly mean discharges, 170 ft³/s (4.81 m³/s), 123,000 acre-ft/yr (150 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 5,270 ft³/s (149 m³/s) July 1, gage height, 19.04 ft (5.803 m); minimum, 5.1 ft³/s (0.144 m³/s) Oct. 2, gage height, 2.02 ft (0.616 m).
Period of record: Maximum discharge, 5,270 ft³/s (149 m³/s) July 1, 1975, gage height, 19.04 ft (5.803 m); no flow Sept. 19-21, Oct. 23, 24, 1956, Aug. 16, 1961.

REMARKS.--Records good. Flow regulated by Lake Ashtabula 108.5 mi (174.6 km) upstream (see station 05057500). Records of chemical analyses and water temperatures for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	24	45	57	50	60	83	1730	248	5210	143	27
2	5.7	25	42	55	48	60	103	1770	246	4660	143	25
3	7.7	26	42	55	50	62	146	1750	238	2750	143	25
4	10	28	45	55	50	65	181	1730	251	1150	146	22
5	10	37	45	55	52	65	259	1700	246	736	141	22
6	11	31	45	59	55	65	311	1690	235	623	136	22
7	12	26	45	59	55	65	316	1660	230	615	134	24
8	15	24	45	59	55	65	295	1580	225	571	131	24
9	20	21	42	59	55	65	266	1260	222	557	134	28
10	20	26	45	58	55	65	259	982	148	654	134	26
11	19	40	50	55	55	65	261	920	118	319	134	24
12	17	34	59	55	55	65	350	903	143	272	136	22
13	18	34	61	55	55	65	488	895	143	311	134	21
14	14	34	61	55	57	65	490	901	143	267	129	22
15	13	42	57	55	57	65	530	901	150	228	129	24
16	13	50	59	55	58	70	551	899	158	202	127	22
17	12	50	59	55	58	96	756	893	158	189	125	21
18	12	59	57	55	58	116	1050	859	148	183	110	25
19	12	61	57	55	58	136	1390	772	264	173	92	24
20	11	48	57	55	58	140	1500	748	718	170	112	31
21	13	40	57	55	60	160	1470	804	848	163	64	37
22	17	57	59	55	60	136	1380	855	776	160	48	37
23	19	48	57	55	60	134	1290	756	512	165	37	37
24	17	30	59	55	60	105	953	638	277	170	27	37
25	17	45	57	55	60	77	1050	597	209	238	21	34
26	17	45	57	55	60	70	1110	434	251	204	19	30
27	17	42	57	52	60	64	1110	329	447	173	20	30
28	17	45	57	52	60	57	1170	308	444	153	24	30
29	17	45	57	50	---	55	1420	295	2440	148	25	31
30	19	45	55	45	---	74	1560	277	4750	150	26	30
31	21	---	59	48	---	77	---	248	---	143	31	---
TOTAL	448.8	1162	1649	1698	1574	2529	22098	30084	15386	21707	2955	814
MEAN	14.5	38.7	53.2	54.8	56.2	81.6	737	970	513	700	95.3	27.1
MAX	21	61	61	59	60	160	1560	1770	4750	5210	146	37
MIN	5.4	21	42	45	48	55	83	248	118	143	19	21
AC-FT	890	2300	3270	3370	3120	5020	43830	59670	30520	43060	5860	1610
CAL YR 1974	TOTAL	88543.5	MEAN 243	MAX 1980	MIN 3.2	AC-FT 175600						
WTR YR 1975	TOTAL	102104.8	MEAN 280	MAX 5210	MIN 5.4	AC-FT 202500						

RED RIVER OF THE NORTH BASIN

59

05059000 SHEYENNE RIVER NEAR KINDRED, N. DAK.

LOCATION.--Lat 46°37'35", long 97°00'05", in NE¼NW¼ sec.5, T.136 N., R.50 W., Richland County, 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 (kilometre 109.6).

DRAINAGE AREA.--8,800 mi² (22,790 km²), approximately, of which about 5,780 mi² (14,970 km²) is probably noncontributing, includes 3,800 mi² (9,840 km²) in closed basins.

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

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

AVERAGE DISCHARGE.--26 years, 197 ft³/s (5.579 m³/s), 142,700 acre-ft/yr (176 hm³/yr); median of yearly mean discharges, 150 ft³/s (4.25 m³/s) 108,700 acre-ft/yr (130 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 4,640 ft³/s (131 m³/s) July 6, gage height, 21.66 ft (6.602 m); minimum, 19 ft³/s (0.54 m³/s) Oct. 1, gage height, 2.91 ft (0.887 m).

Period of record: Maximum discharge, 4,690 ft³/s (133 m³/s) Apr. 15, 1969, gage height, 21.03 ft (6.410 m); maximum gage height, 21.54 ft (6.565 m) Apr. 14, 1969, backwater from ice; minimum discharge, 13 ft³/s (0.37 m³/s) Nov. 13, 1955, Aug. 22-24, 1959; minimum gage height, 2.64 ft (0.805 m) July 16, 17, 1973.

Spring flood in 1947 or 1948 reached a stage of 22.1 ft (6.74 m), from floodmarks, discharge about 3,600 ft³/s (102 m³/s).

REMARKS.--Records good. Flow regulated to a large degree by Lake Ashtabula 202 mi (325 km) upstream (see station 05057500 and several small reservoirs). Records of chemical analyses and water temperatures for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	66	57	70	72	60	90	1500	405	3550	297	122
2	22	66	57	72	72	60	92	1620	379	4020	287	115
3	24	62	57	72	72	62	113	1740	362	4300	275	115
4	26	60	56	72	70	64	110	1820	352	4520	259	113
5	42	59	56	72	70	66	100	1840	345	4580	242	117
6	46	57	54	72	70	68	92	1820	338	4590	233	117
7	44	56	50	72	68	70	97	1800	333	3520	226	117
8	41	56	49	72	68	72	120	1790	321	1920	217	120
9	42	60	53	72	67	72	200	1780	319	1180	202	120
10	45	60	54	72	66	75	250	1750	319	1020	196	124
11	46	59	50	72	65	77	300	1770	319	910	190	128
12	45	58	50	72	65	80	350	1280	297	895	186	124
13	45	57	50	72	65	80	370	1110	242	835	186	128
14	50	46	50	72	65	82	450	1080	219	735	180	126
15	50	34	52	72	65	85	500	1070	228	696	174	115
16	50	45	53	72	65	87	700	1050	228	680	172	95
17	49	56	54	72	65	87	900	1030	228	642	164	95
18	48	62	57	72	65	86	1050	1020	231	620	162	106
19	47	65	58	72	65	92	1070	1020	311	600	160	119
20	46	66	57	72	65	164	1100	1000	690	570	168	119
21	44	58	58	72	66	146	1550	918	947	559	180	117
22	43	65	64	72	66	120	1890	856	1640	515	219	115
23	42	70	64	72	68	180	1780	882	1740	528	215	110
24	41	58	64	72	68	170	1610	958	1590	528	190	106
25	41	47	64	72	68	130	1450	907	1090	487	164	104
26	43	49	65	72	68	120	1290	778	765	436	148	104
27	43	58	65	72	68	150	1260	708	570	435	136	104
28	47	64	66	72	66	130	1300	628	467	477	126	104
29	47	64	66	72	---	100	1320	513	1630	431	119	106
30	47	60	66	72	---	95	1360	455	2120	352	119	106
31	49	---	68	72	---	90	---	429	---	307	124	---
TOTAL	1314	1743	1784	2230	1883	3020	22864	36922	19025	45438	5916	3411
MEAN	42.4	58.1	57.5	71.9	67.3	97.4	762	1191	634	1466	191	114
MAX	50	70	68	72	72	180	1890	1840	2120	4590	297	128
MIN	19	34	49	70	65	60	90	429	219	307	119	95
AC-FT	2610	3460	3540	4420	3730	5990	45350	73230	37740	90130	11730	6770
CAL YR 1974	TOTAL	99185	MEAN 272	MAX 1930	MIN 19	AC-FT 196700						
WTR YR 1975	TOTAL	145550	MEAN 399	MAX 4590	MIN 19	AC-FT 288700						

05059500 SHEYENNE RIVER AT WEST FARGO, N. DAK.

LOCATION.--Lat 46°53'28", long 96°54'24", in SEkSEk sec.31, T.140 N., R.49 W., Cass County, 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 (kilometre 39.4).

DRAINAGE AREA.--8,870 mi² (22,970 km²), approximately, of which about 5,780 mi² (14,970 km²) is probably noncontributing, includes 3,800 mi² (9,840 km²) 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.

GAGE.--Water-stage recorder. Datum of gage is 877.19 ft (267.368 m) above mean sea level. 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.

AVERAGE DISCHARGE.--48 years (1903-5, 1929-75), 171 ft³/s (4.843 m³/s) 123,900 acre-ft/yr (153 hm³/yr); median of yearly mean discharges, 140 ft³/s (3.96 m³/s) 101,000 acre-ft/yr (120 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,850 ft³/s (80.7 m³/s) July 3, gage height, 21.75 ft (6.629 m); minimum, 24 ft³/s (0.68 m³/s) Oct. 2, gage height, 3.62 ft (1.103 m).
Period of record: Maximum discharge, 3,110 ft³/s (88.1 m³/s) Apr. 4, 1966; maximum gage height, 21.70 ft (6.614 m) Apr. 16, 17, 1969, backwater from Red and/or Maple Rivers; minimum discharge, 2.0 ft³/s (0.057 m³/s) Dec. 14, 1936, gage height, 1.90 ft (0.579 m).

REMARKS.--Records good. Flow regulated to a large degree by Lake Ashtabula (see station 05057500). Records of chemical analyses for the water year 1975 are published in Section 2 of this report. Above 3,000 ft³/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 to the east. This overflow is not included in the flow for this station.

REVISIONS (WATER YEARS).--WSP 1388: 1904(M). WSP 1728: Drainage area. See also "PERIOD OF RECORD."

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	77	57	64	70	78	130	1500	460	2460	328	120
2	26	73	54	67	72	75	130	1710	430	2740	303	120
3	29	82	49	68	73	75	120	1770	400	2850	294	120
4	36	76	46	66	75	75	110	1740	380	2680	284	118
5	31	70	45	67	73	78	100	1680	360	2540	270	118
6	33	65	46	70	74	80	100	1660	350	2540	260	115
7	36	61	48	70	73	85	100	1650	350	2600	249	115
8	40	56	49	70	73	85	100	1630	340	2680	246	115
9	38	52	50	70	72	85	110	1610	330	2770	239	113
10	36	51	50	70	77	85	150	1580	320	2760	234	113
11	31	51	50	70	78	85	200	1560	320	2410	229	109
12	38	51	51	70	79	85	230	1410	320	2060	222	109
13	44	48	53	70	77	90	270	1340	320	1680	216	107
14	47	38	54	70	75	90	300	1030	300	1240	214	104
15	44	47	54	70	73	95	380	1000	240	815	212	104
16	50	41	56	70	71	95	430	1000	212	700	207	102
17	50	36	55	70	68	100	590	988	212	600	203	99
18	49	41	55	70	77	100	880	977	212	505	198	104
19	47	42	55	70	75	100	920	972	212	500	192	101
20	45	62	56	70	75	85	900	968	367	490	191	101
21	43	66	58	70	75	85	1220	937	584	482	191	107
22	42	58	60	70	79	110	1370	861	885	456	195	109
23	42	66	62	70	79	130	1680	810	1200	442	222	108
24	40	69	63	70	77	200	1840	820	1470	429	236	107
25	40	70	64	70	81	240	1860	880	1450	424	202	104
26	40	61	64	70	81	230	1840	877	1200	406	164	101
27	40	48	64	70	81	200	1740	900	940	380	145	97
28	40	50	64	70	79	180	1480	780	750	363	130	98
29	40	58	65	70	---	160	1400	700	950	379	119	99
30	45	63	64	67	---	150	1360	600	1820	369	121	101
31	52	---	64	68	---	140	---	500	---	338	122	---
TOTAL	1242	1729	1725	2147	2112	3551	22040	36440	17684	42088	6638	3238
MEAN	40.1	57.6	55.6	69.3	75.4	115	735	1175	589	1358	214	108
MAX	52	82	65	70	81	240	1860	1770	1820	2850	328	120
MIN	26	36	45	64	68	75	100	500	212	338	119	97
AC-FT	2460	3430	3420	4260	4190	7040	43720	72280	35080	83480	13170	6420
CAL YR 1974	TOTAL	103045	MEAN 282	MAX 2050	MIN 26	AC-FT 204400						
WTR YR 1975	TOTAL	140634	MEAN 385	MAX 2850	MIN 26	AC-FT 278900						

05059600 MAPLE RIVER NEAR HOPE, N. DAK.

LOCATION.--Lat 47°19'30", long 97°47'25", in NW¼NW¼ sec.4, T.144 N., R.56 W., Steele County, 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 mi² (52.3 km²), of which about 2.8 mi² (7.3 km²) 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) above mean sea level.

AVERAGE DISCHARGE.--11 years, 3.47 ft³/s (0.098 m³/s), 2,510 acre-ft/yr (3.09 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 122 ft³/s (3.46 m³/s) Apr. 18, gage height, 3.48 ft (1.061 m); maximum gage height 4.73 ft (1.442 m); no flow for many months.
Period of record: Maximum discharge, 734 ft³/s (20.8 m³/s) June 10, 1968, gage height, 4.78 ft (1.457 m); maximum gage height, 5.46 ft (1.664 m) Mar. 15, 1968, backwater from ice; no flow for many months each year.

REMARKS.--Records good except those for the periods of ice effect and no gage height record, which are fair.
Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	0	18	1.3	3.9		
2						0	0	12	.84	3.4		
3						0	0	8.5	.55	14		
4						0	0	7.0	.40	9.8		
5						0	0	5.4	.21	6.7		
6						0	0	4.5	.08	4.2		
7						0	0	3.6	.03	2.9		
8						0	.50	3.3	.02	2.1		
9						0	1.0	2.8	.04	1.3		
10						0	2.0	2.4	.08	.91		
11						0	5.0	2.1	.06	.84		
12						0	10	1.8	.04	.72		
13						0	30	1.6	.03	.66		
14						0	40	1.4	.02	.50		
15						0	50	1.5	.02	.32		
16						0	60	1.4	.02	.18		
17						0	70	1.3	.02	.10		
18						.05	64	1.4	.01	.04		
19						.10	30	1.9	.01	.03		
20						.15	23	2.0	.06	.02		
21						.10	14	2.1	.10	.02		
22						.10	12	2.0	.12	.03		
23						.05	9.0	2.4	.15	.02		
24						.05	7.0	2.4	19	.02		
25						0	5.6	3.3	21	.02		
26						0	5.0	5.1	13	.01		
27						0	5.7	5.7	9.5	0		
28						0	9.5	4.2	6.5	0		
29					---	0	34	3.0	4.2	0		
30					---	0	29	2.2	4.5	0		
31		---			---	0	---	1.7	---	0		---
TOTAL	0	0	0	0	0	.60	516.30	118.0	81.91	52.74	0	0
MEAN	0	0	0	0	0	.019	17.2	3.81	2.73	1.70	0	0
MAX	0	0	0	0	0	.15	70	18	21	14	0	0
MIN	0	0	0	0	0	0	0	1.3	.01	0	0	0
AC-FT	0	0	0	0	0	1.2	1020	234	162	105	0	0
CAL YR 1974	TOTAL 869.17		MEAN 2.38		MAX 123		MIN 0		AC-FT 1720			
WTR YR 1975	TOTAL 769.55		MEAN 2.11		MAX 70		MIN 0		AC-FT 1530			

PEAK DISCHARGE (BASE, 50 F. /S).--Apr. 18 (0400) 122 FT³/S (3.48 FT); Apr. 29 (1000) 51 FT³/S (2.92 FT).

RED RIVER OF THE NORTH BASIN

05059700 MAPLE RIVER NEAR ENDERLIN, N. DAK.

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

DRAINAGE AREA.--843 mi² (2,180 km²), of which about 47 mi² (122 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,056.72 ft (322.088 m) above mean sea level. 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.

AVERAGE DISCHARGE.--19 years, 35.5 ft³/s (1.005 m³/s) 25,720 acre-ft/yr (31.7 hm³/yr); median of yearly mean discharges, 24 ft³/s (0.68 m³/s) 17,400 acre-ft/yr (21 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 7,610 ft³/s (216 m³/s) June 30, gage height, 15.41 ft (4.697 m); minimum daily, 1.7 ft³/s (0.048 m³/s) Feb. 6, gage height, 3.29 ft (1.003 m).
Period of record: Maximum discharge, 7,610 ft³/s (216 m³/s) June 30, 1975, gage height, 15.41 ft (4.697 m); minimum, 0.1 ft³/s (0.003 m³/s) Dec. 7-9, 1963; minimum gage height, 1.90 ft (0.579 m) Oct. 5, 1956.

REMARKS.--Records good except those for the period of no gage height record, which are fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	3.8	2.8	2.6	1.8	1.8	3.3	473	42	3160	21	9.0
2	3.0	3.0	2.8	2.6	1.9	1.8	3.0	412	37	2240	20	9.0
3	3.3	2.5	2.8	2.6	1.9	1.8	3.0	349	35	1850	19	8.3
4	4.1	2.5	2.8	2.6	1.9	1.8	3.0	303	33	1580	18	8.3
5	3.8	2.5	2.8	2.6	1.9	1.8	3.3	249	30	1160	14	8.3
6	3.5	2.5	2.8	2.6	1.7	1.8	3.3	212	26	752	13	8.3
7	3.5	2.3	2.8	2.6	1.8	1.8	3.5	182	23	587	12	7.6
8	3.5	2.0	2.8	2.6	1.9	1.8	3.8	170	20	488	12	7.6
9	3.5	2.0	2.8	2.6	1.9	1.8	3.8	147	20	418	11	6.9
10	3.5	2.0	2.8	2.5	1.8	1.8	3.8	123	21	385	10	6.9
11	4.1	2.8	2.8	3.0	2.0	1.8	5.5	107	18	331	9.7	6.9
12	4.1	2.8	2.6	3.0	2.0	1.8	9.7	89	17	283	9.0	6.9
13	4.1	2.6	2.6	2.6	2.0	1.8	25	76	15	246	9.0	6.9
14	5.5	2.5	2.6	2.3	2.2	1.8	57	68	14	200	9.0	6.9
15	9.7	3.0	2.8	2.2	1.8	1.8	155	66	15	164	9.0	6.9
16	9.7	2.8	2.8	2.2	1.8	2.0	172	57	14	140	9.0	6.2
17	5.5	2.8	2.6	2.2	1.8	2.5	536	53	13	118	9.0	6.2
18	2.8	2.8	2.6	2.2	1.8	12	1460	51	12	102	8.3	5.5
19	2.8	2.8	2.6	2.2	1.8	37	2520	49	25	84	7.6	6.2
20	2.6	2.6	2.6	2.2	1.8	29	2040	49	102	68	6.9	6.9
21	2.5	2.8	2.6	2.2	1.8	20	1590	44	200	59	6.9	6.9
22	2.5	3.3	2.6	2.2	1.8	16	1250	39	259	52	6.9	6.9
23	2.8	3.3	2.6	2.2	1.8	11	950	177	152	51	6.9	6.9
24	2.5	3.0	2.6	2.2	1.8	32	786	218	103	49	7.6	6.0
25	4.2	3.0	2.6	2.2	1.8	77	646	155	77	45	8.3	5.5
26	2.5	3.0	2.6	2.2	1.8	26	557	188	318	39	8.3	6.2
27	2.6	2.8	2.6	2.2	1.8	6.2	485	156	400	35	8.3	6.2
28	2.6	2.8	2.6	2.0	1.8	4.5	445	105	700	32	8.3	6.2
29	2.5	2.8	2.6	2.0	---	4.5	428	75	4520	28	8.3	7.6
30	2.2	2.8	2.6	1.9	---	4.1	470	56	5450	25	9.0	6.2
31	3.0	---	2.6	1.8	---	3.8	---	49	---	23	9.0	---
TOTAL	115.5	82.2	83.2	73.1	51.9	314.6	14621.0	4547	12711	14794	324.3	210.3
MEAN	3.73	2.74	2.68	2.36	1.85	10.1	487	147	424	477	10.5	7.01
MAX	9.7	3.8	2.8	3.0	2.2	77	2520	473	5450	3160	21	9.0
MIN	2.2	2.0	2.6	1.8	1.7	1.8	3.0	39	12	23	6.9	5.5
AC-FT	229	163	165	145	103	624	29000	9020	25210	29340	643	417
CAL YR 1974 TOTAL	10093.6											
WTR YR 1975 TOTAL	47928.1											
MEAN	27.7											
MAX	566											
MIN	1.8											
AC-FT	20020											
WTR YR 1975	95070											

PEAK DISCHARGE (BASE, 100 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-19	0200	10.84	3,040	6-22	0300	5.98	311
5-23	2100	5.69	255	6-29	--	13.73	5,930
5-26	1400	5.31	197	6-30	1830	15.41	7,610
6-20	1100	4.81	123				

05060000 MAPLE RIVER NEAR MAPLETON, N. DAK.

LOCATION.--Lat 46°51'40", long 97°06'10", in SW¼SE¼ sec.10, T.139 N., R.51 W., Cass County, on left bank 25 ft (8 m) upstream from dam, 3 mi (5 km) southwest of Mapleton, and 20 mi (32 km) upstream from mouth.

DRAINAGE AREA.--1,450 mi² (3,760 km²), of which about 71 mi² (184 km²) is probably noncontributing.

PERIOD OF RECORD.--April 1944 to September 1975 (discontinued). Prior to October 1958, published as "at Mapleton".

GAGE.--Water-stage recorder and rubble masonry dam. Datum of gage is 893.53 ft (272.348 m) above mean sea level (levels by Soil Conservation Service). Prior to Oct. 1, 1958, nonrecording gage at site 7 mi (11 km) downstream at different datum.

AVERAGE DISCHARGE.--31 years, 73.6 ft³/s (2.084 m³/s), 53,320 acre-ft/yr (65.7 hm³/yr); median of yearly mean discharges, 43 ft³/s (1.22 m³/s), 31,200 acre-ft/yr (38 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 11,600 ft³/s (329 m³/s) July 2, gage height, 15.03 ft (4.581 m); no flow for many days.

Period of record: Maximum discharge, 11,600 ft³/s (329 m³/s) July 2, 1975, gage height, 15.03 ft (4.581 m); no flow at times in most years.

REMARKS.--Records good. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEAR).--WSP 1175: 1947(M). WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.54	12	7.0	3.0		0	0	1460	142	6460	85	37
2	.75	14	6.2	3.0		0	0	1050	110	11300	81	33
3	.75	16	6.2	3.0		0	0	718	91	10700	76	33
4	.41	17	5.6	3.0		0	2.0	685	80	9200	70	31
5	1.0	20	5.6	3.0		0	7.5	610	71	7440	66	30
6	1.3	23	5.6	2.8		0	10	523	63	5970	62	30
7	1.5	35	5.0	2.5		0	11	460	58	4630	58	30
8	1.4	37	4.2	2.5		0	12	415	53	3650	55	30
9	1.5	34	4.2	2.5		0	14	373	51	2880	52	30
10	1.7	30	4.2	2.2		0	14	331	50	2190	51	28
11	1.4	24	4.4	2.0		0	15	283	50	1830	52	25
12	2.0	20	4.4	1.8		0	30	256	46	1540	48	24
13	2.7	18	4.4	1.5		0	50	220	44	1080	47	24
14	3.2	17	4.4	1.0		0	160	190	42	738	46	23
15	3.3	16	4.4	.80		0	490	173	42	565	45	23
16	3.3	12	4.4	.60		.05	1700	152	36	475	44	22
17	3.3	12	4.4	.50		.20	2600	140	33	412	43	22
18	3.0	10	4.4	.20		.50	4540	124	33	355	43	27
19	3.0	11	4.4	.05		1.0	4320	118	35	310	42	26
20	3.0	11	4.4	.02		3.0	3300	105	66	274	41	22
21	3.3	8.6	4.4	.01		4.0	2640	111	241	235	41	26
22	3.0	8.6	4.4	0		10	2550	117	424	208	41	29
23	3.2	8.6	4.2	0		10	2880	116	712	178	42	27
24	3.3	8.6	4.0	0		.40	2830	110	750	170	44	28
25	3.7	8.6	4.0	0		.01	2480	100	850	162	41	28
26	4.0	8.0	4.0	0		0	1980	128	1100	138	40	26
27	4.2	8.6	3.8	0		0	1770	235	842	128	40	26
28	3.8	8.0	3.5	0		0	1540	232	481	116	39	26
29	3.7	7.5	3.5	0	---	0	1480	223	1100	105	39	26
30	3.5	7.0	3.5	0	---	0	1720	217	2670	94	43	24
31	3.0	---	3.2	0	---	0	---	180	---	86	42	---
TOTAL	77.75	471.1	140.3	35.98	0	29.16	39145.5	10155	10366	73619	1559	816
MEAN	2.51	15.7	4.53	1.16	0	.94	1305	328	346	2375	50.3	27.2
MAX	4.2	37	7.0	3.0	0	10	4540	1460	2670	11300	85	37
MIN	.41	7.0	3.2	0	0	0	0	100	33	86	39	22
AC-FT	154	934	278	71	0	58	77650	20140	20560	146000	3090	1620

CAL YR 1974 TOTAL 25370.76 MEAN 69.5 MAX 1890 MIN 0 AC-FT 50320
WTR YR 1975 TOTAL 136414.79 MEAN 374 MAX 11300 MIN 0 AC-FT 270600

PEAK DISCHARGE (BASE, 300 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-18	--	--	4,770	7-2	1200	15.03	11,600
6-26	1600	7.96	1,140				

RED RIVER OF THE NORTH BASIN

05060500 RUSH RIVER AT AMENIA, N. DAK.

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

DRAINAGE AREA.--116 mi² (300 km²).

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

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

AVERAGE DISCHARGE.--29 years, 9.08 ft³/s (0.257 m³/s), 6,580 acre-ft/yr (8.11 hm³/yr); median of yearly mean discharges, 5.9 ft³/s (0.17 m³/s), 4,300 acre-ft/yr (5.3 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,550 ft³/s (72.2 m³/s) Apr. 18, gage height, 11.62 ft (3.542 m); no flow for many days.

Period of record: Maximum discharge, 2,550 ft³/s (72.2 m³/s) Apr. 18, 1975; maximum gage height, 12.15 ft (3.703 m) Mar. 23, 1966, backwater from ice; no flow at times each year.

REMARKS.--Records good, except those for the period of ice effect which are fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.45			0	0	145	11	381	.57	
2		1.5	.40			0	0	108	6.3	221	.57	
3		2.3	.35			0	0	69	6.3	168	.50	
4		2.6	.30			0	0	65	6.3	125	.37	
5		3.4	.25			0	0	52	4.6	86	.26	
6		3.2	.20			0	0	40	4.1	57	.18	
7		2.6	.15			0	0	30	3.4	39	.09	
8		2.1	.10			0	0	27	3.6	31	.02	
9		1.9	.08			0	0	25	3.6	22	.01	
10		1.8	.06			0	0	22	3.8	18	.02	
11		1.7	.04			0	0	15	3.9	15	.01	
12		1.7	.04			0	0	12	3.8	12	0	
13		1.6	.03			0	0	9.8	3.6	9.8	0	
14		1.4	.03			0	50	6.5	2.8	6.3	0	
15		1.3	.02			0	640	5.9	2.6	4.6	0	
16		1.3	.02			0	645	5.2	1.9	4.1	0	
17		1.2	.01			0	1600	4.6	1.8	3.6	0	
18		1.2	.01			0	2310	4.2	2.0	3.2	0	
19		1.2	.01			0	996	5.5	2.6	2.6	0	
20		1.1	0			0	439	45	6.3	2.3	0	
21		1.1	0			1.4	332	120	68	1.8	0	
22		.98	0			.98	273	213	93	1.4	0	
23		.98	0			.50	212	87	61	1.4	0	
24		.98	0			.25	180	63	34	1.4	0	
25		.89	0			.10	139	47	80	1.3	0	
26		.85	0			.05	116	32	147	.98	0	
27		.75	0			0	115	25	134	.89	0	
28		.70	0			0	115	22	103	.80	0	
29		.60	0		---	0	213	20	161	.71	0	
30		.50	0		---	0	215	19	241	.64	0	
31		---	0		---	0	---	14	---	.64	0	---
TOTAL	0	43.43	2.55	0	0	3.28	8590	1358.7	1206.3	1223.46	2.60	0
MEAN	0	1.45	.082	0	0	.11	286	43.8	40.2	39.5	.084	0
MAX	0	3.4	.45	0	0	1.4	2310	213	241	381	.57	0
MIN	0	0	0	0	0	0	0	4.2	1.8	.64	0	0
AC-FT	0	86	5.1	0	0	6.5	17040	2690	2390	2430	5.2	0
CAL YR 1974	TOTAL	5396.62	MEAN 14.8	MAX 599	MIN 0	AC-FT 10700						
WTR YR 1975	TOTAL	12430.32	MEAN 34.1	MAX 2310	MIN 0	AC-FT 24660						

PEAK DISCHARGE (BASE, 27 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-18	1000	11.62	2,550	6-22	1100	6.18	119
4-29	2030	7.26	272	6-26	1700	6.68	160
5-22	--	--	131	7-1	0300	9.04	460

05064500 RED RIVER OF THE NORTH AT HALSTAD, MINN.

LOCATION.--Lat 47°21'10", long 96°50'50", on line between secs.24 and 25, T.14S N., R.49 W., Traill County, 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 (kilometre 603.7).

DRAINAGE AREA.--21,800 mi² (56,500 km²), approximately, includes 3,800 mi² (9,840 km²) in closed basins.

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.

GAGE.--Water-stage recorder. Datum of gage is 826.65 ft (251.963 m) above mean sea level. Prior to July 17, 1961, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--14 years, 1,955 ft³/s (55.37 m³/s), 1,416,000 acre-ft/yr (1.75 km³/yr); median of yearly mean discharges, 1,880 ft³/s (53.2 m³/s), 1,360,000 acre-ft/yr (1.7 km³/yr).

EXTREMES.--Current year: Maximum discharge, 39,900 ft³/s (1,130 m³/s) July 10, gage height, 38.55 ft (11.750 m), minimum, 170 ft³/s (4.81 m³/s) Jan. 18, gage height, 3.42 ft (1.042 m).
Period of record: Maximum discharge, 39,900 ft³/s (1,130 m³/s) July 10, 1975, gage height, 38.55 ft (11.750 m); minimum discharge observed, 5.4 ft³/s (0.15 m³/s) Oct. 8, 9, 12-14, 1936.
Flood in 1897 reached a stage of about 38.5 ft (11.73 m).

REMARKS.--Records good. Some regulation by many controlled lakes and reservoirs on tributaries. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1388: 1936, 1950. WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	376	631	455	351	411	461	1020	18400	2540	16400	2360	980
2	399	779	480	357	425	461	970	17200	2420	18800	2510	950
3	425	951	535	360	402	464	900	15900	2310	22400	2460	920
4	428	886	532	357	405	477	850	14000	2220	27600	2290	900
5	454	801	493	354	408	486	850	11700	2180	32900	2140	880
6	486	783	454	354	421	496	870	9500	2120	36400	2010	850
7	522	783	415	351	425	499	900	8320	2060	38200	1860	830
8	499	751	399	345	428	512	920	6700	2010	39100	1730	812
9	461	729	376	345	421	522	950	6090	1970	39700	1640	808
10	421	722	357	340	421	532	1050	5670	1940	39900	1570	801
11	411	702	351	335	425	539	1120	5360	1910	38400	1510	790
12	395	680	330	325	438	549	1800	5100	1880	36200	1470	776
13	418	663	305	300	451	566	3500	4800	1870	34200	1430	758
14	496	607	297	300	467	576	5300	4450	1870	31800	1400	744
15	552	499	320	300	461	579	8300	4120	1840	29000	1350	730
16	562	470	357	245	464	579	11200	3900	1780	26400	1310	719
17	562	468	379	190	467	583	15000	3750	1740	23500	1290	709
18	552	465	386	174	470	593	20800	3660	1730	20400	1280	712
19	552	465	383	192	470	628	24800	3570	1680	16700	1230	719
20	552	464	373	326	480	691	24800	3600	1880	12600	1220	747
21	529	519	363	360	473	816	24100	3720	3430	8300	1200	719
22	522	583	351	370	473	992	23000	3700	6100	5200	1190	659
23	522	499	351	370	467	1090	22900	3620	7900	3960	1180	642
24	512	483	360	368	457	1120	22300	3570	9200	3620	1170	649
25	516	475	373	367	457	1160	21600	3460	10900	3400	1150	659
26	499	472	379	360	464	1150	20700	3360	11600	3200	1120	656
27	493	470	383	354	461	1110	19800	3250	11700	3050	1100	652
28	489	468	370	351	457	1080	19300	3090	11500	2900	1070	642
29	486	462	360	357	---	1050	19000	2960	11600	2720	1050	649
30	489	455	354	363	---	1050	18900	2830	13600	2560	1030	670
31	502	---	360	389	---	1040	---	2690	---	2440	1000	---
TOTAL	15082	18185	11981	10210	12469	22451	337500	192040	137480	621950	46320	22732
MEAN	487	606	386	329	445	724	11250	6195	4583	20060	1494	758
MAX	562	951	535	389	480	1160	24800	18400	13600	39900	2510	980
MIN	376	455	297	174	402	461	850	2690	1680	2440	1000	642
AC-FT	29920	36070	23760	20250	24730	44530	669400	380900	272700	1234000	91880	45090
CAL YR 1974 TOTAL	675328	MEAN	1850	MAX	16400	MIN	275	AC-FT	1340000			
WTR YR 1975 TOTAL	1448400	MEAN	3968	MAX	39900	MIN	174	AC-FT	2873000			

RED RIVER OF THE NORTH BASIN

05064900 BEAVER CREEK NEAR FINLEY, N. DAK.
(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, on right bank 500 ft (152 m) upstream from bridge on county highway, 7 mi (11 km) northeast of Finley.

DRAINAGE AREA.--160 mi² (410 km²), approximately.

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) above mean sea level.

AVERAGE DISCHARGE.--11 years, 10.4 ft³/s (0.294 m³/s) 7,530 acre-ft/yr (9.28 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 472 ft³/s (13.4 m³/s) June 22, gage height, 5.07 ft (1.545 m), maximum gage height, 6.28 ft (1.914 m) Apr. 13, backwater from ice; no flow for several months.

Period of record: Maximum discharge, 1,320 ft³/s (37.4 m³/s) Apr. 9, 1969, gage height, 6.55 ft (1.996 m); maximum gage height, 9.70 ft (2.957 m) Mar. 14, 1966, backwater from ice; no flow for several months each year.

REMARKS.--Records good. Records of chemical analyses and suspended sediment loads for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.20	.09			0	4.0	88	1.6	12		
2	0	.40	.07			0	2.0	71	1.4	6.8		
3	0	.55	.05			0	1.0	64	1.2	5.2		
4	0	.64	.02			0	1.0	51	1.1	4.9		
5	0	.59	0			0	5.0	37	.96	4.6		
6	0	.59	0			0	10	27	.82	4.0		
7	0	.59	0			0	15	22	.75	2.8		
8	0	.59	0			0	20	19	.69	2.5		
9	0	.59	0			0	30	16	1.0	1.9		
10	0	.59	0			0	40	13	1.6	1.9		
11	0	.59	0			0	50	10	1.6	1.6		
12	0	.64	0			0	70	8.5	1.5	1.3		
13	0	.59	0			0	75	7.4	1.2	1.2		
14	0	.59	0			0	80	7.1	1.1	1.0		
15	0	.59	0			0	100	6.2	1.0	.89		
16	0	.59	0			0	140	5.4	.89	.82		
17	0	.59	0			1.0	186	4.9	.75	.82		
18	0	.59	0			5.0	140	4.4	.69	.75		
19	0	.59	0			20	80	4.6	.69	.64		
20	0	.51	0			15	55	4.2	.64	.51		
21	0	.51	0			10	47	3.5	1.8	.43		
22	0	.43	0			10	45	3.0	1.57	.35		
23	0	.40	0			9.0	50	9.8	.64	.39		
24	0	.32	0			8.5	48	15	.32	.35		
25	0	.28	0			8.0	45	5.4	21	.27		
26	0	.24	0			7.0	33	4.6	12	.15		
27	0	.23	0			6.5	31	4.9	6.8	.02		
28	.01	.22	0			6.0	55	4.2	4.6	0		
29	.05	.21	0		---	5.5	116	3.3	4.2	0		
30	.10	.15	0		---	5.0	152	2.5	7.9	0		
31	.15	---	0		---	4.5	---	1.9	---	0		---
TOTAL	.31	14.19	.23	0	0	121.0	1726.0	528.8	332.48	58.09	0	0
MEAN	.010	.47	.007	0	0	3.90	57.5	17.1	11.1	1.87	0	0
MAX	.15	.64	.09	0	0	20	186	88	157	12	0	0
MIN	0	.15	0	0	0	0	1.0	1.9	.64	0	0	0
AC-FT	.6	28	.5	0	0	240	3420	1050	659	115	0	0
CAL YR 1974	TOTAL	5939.15	MEAN	16.3	MAX	440	MIN	0	AC-FT	11780		
WTR YR 1975	TOTAL	2781.10	MEAN	7.62	MAX	186	MIN	0	AC-FT	5520		

PEAK DISCHARGE (BASE, 50 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-17	--	--	230	6-22	1030	5.07	472
4-30	0400	4.12	168				

05065500 GOOSE RIVER NEAR PORTLAND, N. DAK.

LOCATION.--Lat 47°32'20", long 97°27'20", in SE¼NE¼ sec.19, T.147 N., R.53 W., Traill County, 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 mi² (1,340 km²), of which about 110 mi² (285 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1939 to September 1975 (discontinued).

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

AVERAGE DISCHARGE.--36 years, 30.9 ft³/s (0.875 m³/s), 22,390 acre-ft/yr (27.6 hm³/yr); median of yearly mean discharges, 15 ft³/s (0.42 m³/s), 10,900 acre-ft/yr (13 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,340 ft³/s (37.9 m³/s) Apr. 19, gage height, 14.92 ft (4.548 m), backwater from ice; no flow for several days.
Period of record: Maximum discharge, 8,530 ft³/s (242 m³/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.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.89	3.5	.54	.50	.03	.02	.70	706	27	75	1.2	.02
2	.89	4.0	.53	.50	.03	.02	.60	754	25	52	.90	.02
3	.89	3.9	.53	.50	.03	.02	.55	527	22	42	.80	.02
4	1.1	3.8	.53	.50	.03	.02	.50	362	21	35	.81	.02
5	1.5	3.6	.53	.50	.03	.02	.45	284	18	33	.44	.02
6	2.4	3.4	.53	.50	.03	.02	.40	236	16	30	.22	.02
7	2.8	3.2	.53	.50	.03	.02	.35	198	17	26	.27	.03
8	3.2	2.7	.53	.50	.03	.02	.30	169	14	22	.26	.03
9	3.9	2.0	.53	.50	.03	.02	.24	142	16	20	.18	.02
10	4.3	2.2	.53	.50	.03	.02	.24	121	18	17	.11	.02
11	4.3	2.4	.53	.50	.03	.02	1.0	101	17	13	.08	.03
12	3.5	2.2	.53	.50	.03	.02	.40	99	17	12	.08	.02
13	3.5	1.9	.53	.49	.02	.02	.83	87	16	12	.05	.02
14	3.5	1.3	.53	.49	.02	.02	153	72	15	12	.03	.02
15	3.2	1.1	.53	.49	.02	.02	650	67	15	10	.03	.01
16	3.2	1.0	.53	.48	.02	.50	943	62	13	9.8	.03	.01
17	5.5	1.2	.53	.48	.02	1.7	1190	60	13	8.0	.03	.01
18	3.5	1.5	.53	.48	.02	3.7	1260	58	11	7.3	.03	.03
19	4.3	1.3	.53	.48	.02	15	1300	58	12	6.9	.02	.03
20	4.3	.89	.53	.48	.02	22	1160	48	15	6.1	.02	.02
21	4.3	.57	.52	.47	.02	14	772	44	16	5.2	.03	.02
22	3.5	.57	.52	.47	.02	8.0	551	37	16	4.1	.02	.01
23	3.5	.56	.52	.47	.02	6.0	438	38	28	3.8	.04	0
24	3.5	.56	.52	.47	.02	4.0	414	38	176	4.1	.03	0
25	3.2	.55	.52	.47	.02	2.0	369	38	351	3.4	.02	0
26	2.4	.55	.52	.46	.02	1.9	303	56	260	2.9	.02	0
27	2.8	.55	.52	.44	.02	1.8	258	62	183	3.0	.02	0
28	2.1	.55	.52	.44	.02	1.5	242	55	148	3.1	.03	0
29	1.7	.55	.51	.44	---	1.0	280	54	127	2.4	.02	0
30	2.1	.54	.51	.13	---	.90	400	45	105	2.0	.03	0
31	2.7	---	.51	.04	---	.75	---	35	---	1.2	.03	---
TOTAL	92.47	52.64	16.30	14.17	.68	85.05	10811.33	4713	1748	484.3	5.88	.45
MEAN	2.98	1.75	.53	.46	.024	2.74	360	152	58.3	15.6	.19	.015
MAX	5.5	4.0	.54	.50	.03	22	1300	754	351	75	1.2	.03
MIN	.89	.54	.51	.04	.02	.02	.24	35	11	1.2	.02	0
AC-FT	183	104	32	28	1.3	169	21440	9350	3470	961	12	.9
CAL YR 1974	TOTAL	26296.68	MEAN	72.0	MAX	2060	MIN	0	AC-FT	52160		
WTR YR 1975	TOTAL	18024.27	MEAN	49.4	MAX	1300	MIN	0	AC-FT	35750		

PEAK DISCHARGE (BASE, 200 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-19	--	--	1,340	6-25	0100	6.48	364
5- 1	2315	10.18	801				

RED RIVER OF THE NORTH BASIN

05066500 GOOSE RIVER AT HILLSBORO, N. DAK.

LOCATION.--Lat 47°24'20", long 97°03'40", in NW¼ sec.5, T.14S N., R.50 W., Traill County, on right bank 600 ft (180 m) upstream from Fooman Dam in Hillsboro 27.5 mi (44 km) upstream from mouth.

DRAINAGE AREA.--1,203 mi² (3,116 km²), of which 110 mi² (285 km²) 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) above mean sea level. 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.

AVERAGE DISCHARGE.--42 years (1931-32, 1934-75), 65.9 ft³/s (1.866 m³/s) 47,740 acre-ft/yr (58.9 hm³/yr); median of yearly mean discharges, 40 ft³/s (1.13 m³/s) 29,000 acre-ft/yr (36 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 3,810 ft³/s (108 m³/s) Apr. 19, gage height, 11.11 ft (3.386 m) backwater from ice; minimum daily, 0.18 ft³/s (0.005 m³/s) Oct. 8, 10, 11.
Period of record: Maximum discharge, 9,420 ft³/s (267 m³/s) Apr. 19, 1950; maximum gage height, 14.94 ft (4.554 m) Apr. 19, 1950; no flow at times.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	15	6.0	7.0	6.5	6.0	30	962	86	156	5.5	.94
2	.50	12	8.0	7.0	6.5	6.0	30	835	70	142	6.0	1.9
3	.50	14	8.0	7.0	6.5	6.0	30	828	67	128	6.5	.62
4	.50	6.8	8.0	7.0	6.5	6.0	30	611	65	124	6.0	.38
5	1.4	5.6	8.0	7.0	6.5	6.0	30	407	60	124	5.0	.62
6	4.6	12	8.0	7.0	6.5	6.0	33	306	59	124	4.2	.62
7	.62	6.8	8.0	7.0	6.5	6.0	33	250	57	114	3.5	.38
8	.18	4.7	8.0	7.0	6.3	6.0	33	220	54	108	3.1	.38
9	.94	4.7	8.0	7.0	6.3	6.0	33	201	52	101	3.0	1.4
10	.18	4.7	8.0	7.0	6.3	6.0	35	189	51	92	2.9	1.9
11	.18	4.7	8.0	7.0	6.3	6.0	45	185	46	89	2.8	2.4
12	1.4	4.7	8.0	7.0	6.1	6.0	69	163	46	70	2.5	3.1
13	2.4	4.5	8.0	7.0	6.1	6.0	167	160	49	60	2.2	3.8
14	1.9	4.5	7.5	7.0	6.0	6.0	625	167	52	50	2.0	4.7
15	1.4	4.5	7.5	7.0	6.0	6.0	1270	156	52	45	1.9	6.8
16	1.9	4.5	7.5	7.0	6.0	8.0	1900	142	46	42	1.4	9.4
17	2.4	4.5	7.5	7.0	6.0	10	2380	138	41	42	1.4	4.7
18	1.4	4.5	7.5	7.0	6.0	15	3370	128	37	42	1.9	2.4
19	.50	4.5	7.3	7.0	6.0	33	3740	122	35	28	2.3	1.9
20	1.4	4.5	7.2	7.0	6.0	40	3560	124	33	24	1.9	1.4
21	2.4	4.5	7.0	7.0	6.0	83	2850	114	37	20	3.7	1.4
22	3.1	4.5	7.0	7.0	6.0	121	1940	108	40	18	3.7	1.4
23	1.4	4.5	7.0	6.8	6.0	108	1030	111	52	14	2.5	1.4
24	1.9	4.5	7.0	6.8	6.0	58	790	105	55	10	1.9	1.4
25	3.1	4.5	7.0	6.7	6.0	50	597	105	156	8.0	1.9	1.4
26	1.9	4.5	7.0	6.7	6.0	45	481	101	356	8.0	2.0	1.4
27	1.9	4.5	7.0	6.7	6.0	40	401	111	336	8.0	1.9	1.4
28	1.9	4.5	7.0	6.7	6.0	35	372	132	241	7.5	1.2	2.4
29	1.9	4.5	7.0	6.7	---	32	662	132	185	7.0	1.2	2.4
30	1.9	4.5	7.0	6.7	---	30	1030	118	167	6.5	1.4	2.4
31	3.8	---	7.0	6.5	---	30	---	101	---	6.0	.62	---
TOTAL	50.50	176.7	231.0	214.3	172.9	828.0	27596	7532	2683	1818.0	88.02	66.74
MEAN	1.63	5.89	7.45	6.91	6.18	26.7	920	243	89.4	58.6	2.84	2.22
MAX	4.6	15	8.0	7.0	6.5	121	3740	962	356	156	6.5	9.4
MIN	.18	4.5	6.0	6.5	6.0	6.0	30	101	33	6.0	.62	.38
AC-FT	100	350	458	425	343	1640	54740	14940	5320	3610	175	132

CAL YR 1974 TOTAL 49670.00 MEAN 136 MAX 3250 MIN 0 AC-FT 98520
WTR YR 1975 TOTAL 41457.16 MEAN 114 MAX 3740 MIN .18 AC-FT 82230

PEAK DISCHARGE (BASE, 200 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-19	--	--	3,810	6-26	1515	2.81	378
4-30	1730	4.34	1,100				

RED RIVER OF THE NORTH BASIN

69

05082500 RED RIVER OF THE NORTH AT GRAND FORKS, N. DAK.

LOCATION.--Lat 47°56'34", long 97°03'10", in SW¼NE¼ sec.33, T.152 N., R.50 W., Grand Forks County, 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 (kilometre 475.8).

DRAINAGE AREA.--30,100 mi² (78,000 km²), approximately, includes 3,800 mi² (9,840 km²) in closed basins.

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

GAGE.--Water-stage recorder. Datum of gage is 778.35 ft (237.241 m) above mean sea level. 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.

AVERAGE DISCHARGE.--93 years, 2,524 ft³/s (71.48 m³/s) 1,829,000 acre-ft/yr (2.26 km³/yr).

EXTREMES.--Current year: Maximum discharge, 42,800 ft³/s (1,210 m³/s) July 14, gage height 43.08 ft (13.131 m); maximum gage height 43.30 ft (13.198 m) Apr. 23; minimum daily discharge, 1,000 ft³/s (28.3 m³/s) Jan. 16; minimum gage height, 6.57 ft (2.003 m).

Period of record: Maximum discharge about 80,000 ft³/s (2,270 m³/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 ft³/s (1,530 m³/s) minimum, 2.4 ft³/s (0.068 m³/s) Feb. 3-5, 12, 14, 16-19, 1937, caused by unusual regulation during repair of dam at Grand Forks.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by many lakes and reservoirs on tributaries. Records of chemical analysis and water temperatures for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--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.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1600	2160	1190	1310	1380	1420	2200	38000	4710	14800	4600	2260
2	1600	2330	1180	1310	1390	1410	2200	37200	4550	17200	4300	1950
3	1580	2460	1170	1310	1400	1420	2180	35700	4370	20000	4200	1900
4	1620	2610	1170	1310	1410	1430	2140	35500	4210	24200	4200	2040
5	1720	2720	1170	1300	1420	1430	2090	30300	4030	29100	4100	2060
6	1770	2690	1170	1300	1420	1440	2060	27000	3920	31600	3800	2080
7	1800	2640	1170	1300	1420	1450	2000	24000	3870	33000	3570	2100
8	1780	2640	1170	1320	1420	1450	1950	20700	3780	34600	3370	2150
9	1890	2640	1160	1320	1420	1450	1950	17900	3710	36400	3220	2180
10	1910	2640	1160	1320	1420	1450	2000	15700	3700	38000	3080	2200
11	1930	2600	1160	1310	1420	1450	2200	14500	3700	40800	2920	2220
12	1950	2540	1190	1300	1420	1450	3100	12100	3680	41300	2880	2240
13	1970	2440	1200	1360	1420	1450	5000	11100	3640	41900	2800	2280
14	2000	2330	1200	1290	1420	1450	7700	10600	3610	42400	2730	2300
15	2030	2070	1200	1210	1430	1450	10000	10100	3630	41500	2670	2370
16	2060	1760	1200	1000	1440	1460	12600	9700	3620	40600	2600	2330
17	2080	1610	1210	1150	1440	1470	15600	9100	3550	37400	2560	2480
18	2100	1620	1230	1200	1450	1510	20000	8600	3440	35400	2550	2540
19	2150	1820	1250	1250	1450	1570	28300	8300	3400	32100	2530	2500
20	2150	1860	1270	1260	1450	1620	36800	7800	3500	29000	2520	2450
21	2110	1700	1330	1270	1450	1720	41100	7600	3560	25800	2490	2400
22	2120	1500	1360	1300	1460	1950	42400	7300	4500	20100	2520	2320
23	2110	1400	1390	1350	1460	2200	42200	7200	8100	16100	2560	2280
24	2060	1200	1360	1370	1460	2530	41000	6900	10900	12000	2570	2230
25	2030	1200	1390	1380	1470	2540	40000	6600	12300	9200	2530	2240
26	2020	1200	1330	1380	1470	2400	39500	6400	12700	8200	2570	2220
27	2010	1200	1220	1370	1470	2350	38900	6100	13700	7300	2610	2180
28	2000	1200	1300	1370	1470	2300	38500	5900	14100	6800	2600	2140
29	1990	1200	1320	1370	---	2250	38300	5600	14300	6200	2550	2180
30	1980	1190	1320	1370	---	2240	38300	5400	14400	5500	2500	2030
31	1990	---	1310	1370	---	2220	---	5000	---	5000	2420	---
TOTAL	60110	59170	38450	40330	40150	53930	562270	453900	185180	783500	93120	66850
MEAN	1939	1972	1240	1301	1434	1740	18740	14640	6173	25270	3004	2228
MAX	2150	2720	1390	1380	1470	2540	42400	38000	14400	42400	4600	2540
MIN	1580	1190	1160	1000	1380	1410	1950	5000	3400	5000	2420	1900
AC-FT	119200	117400	76270	79990	79640	107000	1115000	900300	367300	1554000	184700	132600
CAL YR 1974	TOTAL	1632140	MEAN	4472	MAX	34100	MIN	1160	AC-FT	3237000		
WTR YR 1975	TOTAL	2436960	MEAN	6677	MAX	42400	MIN	1000	AC-FT	4834000		

RED RIVER OF THE NORTH BASIN

05083600 MIDDLE BRANCH FOREST RIVER NEAR WHITMAN, N. DAK.

LOCATION.--Lat 48°14'50", long 98°07'00", in SE¼NW¼ sec.16, T.15S N., R.58 W., Walsh County, 150 ft (46 m) downstream from bridge on State Highway 35, and 6 mi (10 km) north of Whitman.

DRAINAGE AREA.--47.7 mi² (123.5 km²), 8.8 mi² (22.8 km²) noncontributing.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,510 ft (460.2 m) from topographic map.

AVERAGE DISCHARGE.--15 years, 2.94 ft³/s (0.083 m³/s), 2,130 acre-ft/yr (2.63 hm³/yr); median of yearly mean discharges, 2.0 ft³/s (0.057 m³/s) 1,400 acre-ft/yr (1.7 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 71 ft³/s (2.01 m³/s) July 1, gage height, 4.55 ft (1.387 ft); no flow for many months.
Period of record: Maximum discharge, 984 ft³/s (27.9 m³/s) May 19, 1974, gage height, 7.11 ft (2.167 m); no flow for many months each year.

REMARKS.--Records good. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	35	0	25	.02	.63
2							0	31	0	28	.33	.21
3							0	21	0	8.4	.17	.07
4							0	14	0	9.6	.08	.05
5							0	8.2	0	24	.04	.05
6							0	5.0	0	20	0	.03
7							0	3.1	0	14	0	.02
8							0	2.0	0	14	0	0
9							0	1.2	0	14	0	0
10							0	.76	0	13	0	0
11							.50	.51	0	13	0	0
12							2.0	.27	0	12	0	0
13							5.0	.25	0	11	0	0
14							10	.63	0	9.9	0	0
15							15	.21	0	7.7	0	0
16							20	.13	.01	6.5	0	0
17							22	.06	.04	5.2	0	0
18							24	.10	.03	4.3	0	0
19							15	.06	.02	4.3	0	0
20							8.0	.03	.05	1.9	0	.15
21							16	.04	.09	.91	0	.15
22							15	.04	.36	.69	0	.09
23							12	.03	.84	.88	0	.05
24							9.3	.04	.25	.42	0	.03
25							6.5	.20	.11	.33	0	.02
26							4.9	.14	.05	.27	0	0
27							4.1	.07	.01	.21	0	0
28							6.7	.03	0	.09	0	0
29					---	---	20	0	0	.07	0	0
30					---	---	36	0	.12	.04	0	0
31		---			---	---	---	0	---	0	.18	---
TOTAL	0	0	0	0	0	0	252.00	124.10	1.98	249.71	.82	1.55
MEAN	0	0	0	0	0	0	8.40	4.00	.066	8.06	.027	.052
MAX	0	0	0	0	0	0	36	35	.84	28	.33	.63
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	0	0	0	500	246	3.9	495	1.6	3.1
CAL YR 1974	TOTAL	4173.41	MEAN	11.4	MAX	472	MIN	0	AC-FT	8280		
WTR YR 1975	TOTAL	630.16	MEAN	1.73	MAX	36	MIN	0	AC-FT	1250		

PEAK DISCHARGE (BASE, 70 FT³/S)---July 1 (1830) 71 FT³/S (4.55 FT).

05084000 FOREST RIVER NEAR FORDVILLE, N. DAK.

LOCATION.--Lat 48°11'50", long 97°43'49", on line between secs.32 and 33, T.155 N., R.55 W., Walsh County, 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 mi² (1,181 km²), of which about 120 mi² (311 km²) is probably noncontributing.

PERIOD OF RECORD.--April 1940 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,040 ft (317 m), by barometer. Prior to July 21, 1951, nonrecording gage at site 50 ft (15 m) downstream at same datum.

AVERAGE DISCHARGE.--35 years, 38.2 ft³/s (1.08 m³/s) 27,700 acre-ft/yr (34.2 hm³/yr); median of yearly mean discharges, 36 ft³/s (1.02 m³/s), 26,100 acre-ft/yr (32 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,270 ft³/s (36.0 m³/s) Apr. 12, gage height 5.68 ft (1.731 m); minimum 3.9 ft³/s (0.11 m³/s), Aug. 26, gage height 1.51 ft (0.460 m).

Period of record: Maximum discharge, 16,400 ft³/s (464 m³/s) Apr. 18, 1950, gage height 14.48 ft (4.414 m), from floodmark, from rating curve extended above 5,600 ft³/s (159 m³/s) on basis of contracted-opening and slope-area measurements of peak flow; no flow Apr. 1-13, Sept. 3, 1940.

REMARKS.--Records good, except those for periods of indefinite stage discharge relation due to ice or beaver activity, 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 hm³). Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	16	13	9.0	7.5	8.0	28	435	17	36	8.0	7.6
2	11	15	13	9.0	7.5	8.0	28	272	17	649	8.0	7.6
3	11	14	13	8.5	7.5	8.0	27	195	17	281	7.6	6.5
4	11	13	13	8.5	7.5	8.0	28	156	17	178	7.2	6.2
5	13	13	13	8.5	7.5	8.0	27	128	16	161	7.2	6.5
6	14	13	12	8.5	7.5	8.0	26	104	15	137	6.9	6.5
7	14	13	12	8.5	7.5	8.0	26	87	13	121	6.2	6.5
8	14	13	12	8.5	7.5	8.0	25	73	13	95	6.9	6.5
9	13	13	12	8.5	7.5	8.0	24	64	14	71	6.6	6.5
10	13	13	12	8.5	7.5	8.0	24	56	20	61	6.2	6.5
11	13	12	11	8.5	7.5	8.0	22	52	18	53	5.5	6.5
12	12	12	11	8.0	7.5	8.5	777	46	14	44	5.5	6.5
13	13	12	11	8.0	7.5	9.0	945	39	12	39	5.2	6.5
14	15	12	10	8.0	7.5	9.1	819	40	12	31	5.2	6.5
15	15	12	10	8.0	7.5	9.1	681	37	11	28	5.2	6.5
16	12	13	10	8.0	7.5	9.5	566	32	11	24	5.8	6.5
17	12	14	10	8.0	7.5	9.9	544	28	14	22	5.5	6.5
18	11	15	10	8.0	7.5	9.9	421	28	13	20	5.5	7.5
19	11	15	10	8.0	7.5	13	323	26	14	17	5.8	7.0
20	11	15	10	8.0	7.5	17	210	24	16	15	5.8	6.5
21	11	15	9.5	8.0	7.5	17	225	22	16	14	5.5	6.5
22	12	15	9.5	8.0	7.5	30	214	20	20	13	5.8	6.5
23	12	15	9.5	8.0	7.5	32	173	22	28	13	6.5	6.5
24	11	15	9.5	8.0	7.8	32	160	23	26	12	5.2	6.5
25	12	14	9.5	8.0	8.0	32	133	21	24	10	4.8	6.5
26	12	14	9.5	7.5	8.0	31	116	20	20	9.1	4.4	6.5
27	12	14	9.0	7.5	8.0	31	111	19	17	8.0	5.5	6.5
28	12	14	9.0	7.5	8.0	31	111	18	17	8.0	5.8	6.5
29	13	14	9.0	7.5	---	30	298	18	19	8.0	6.2	6.5
30	13	14	9.0	7.5	---	29	408	17	24	7.6	6.9	6.5
31	13	---	9.0	7.5	---	29	---	17	---	7.6	7.2	---
TOTAL	383	412	330.0	251.5	212.3	507.0	7520	2139	505	2193.3	189.6	198.4
MEAN	12.4	13.7	10.6	8.11	7.58	16.4	251	69.0	16.8	70.8	6.12	6.61
MAX	15	16	13	9.0	8.0	32	945	435	28	649	8.0	7.6
MIN	11	12	9.0	7.5	7.5	8.0	22	17	11	7.6	4.4	6.2
AC-FT	760	817	655	499	421	1010	14920	4240	1000	4350	376	394
CAL YR 1974	TOTAL	35496.8	MEAN	97.3	MAX	3250	MIN	7.2	AC-FT	70410		
WTR YR 1975	TOTAL	14841.1	MEAN	40.7	MAX	945	MIN	4.4	AC-FT	29440		

PEAK DISCHARGE (BASE, 200 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-12	1730	5.68	1,270	7- 2	0600	4.77	819
5- 1	0930	4.22	577				

RED RIVER OF THE NORTH BASIN

05085000 FOREST RIVER AT MINTO, N. DAK.

LOCATION.--Lat 48°16'10", long 97°22'10", in SE¼ sec.31, T.156 N., R.52 W., Walsh County, 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 mi² (1,920 km²), of which about 120 mi² (310 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 806.95 ft (245.958 m) above mean sea level. Prior to July 15, 1954, nonrecording gage at site 400 ft (120 m) upstream at same datum.

AVERAGE DISCHARGE.--31 years, 50.4 ft³/s (1.427 m³/s) 36,520 acre-ft/yr (45.0 hm³/yr); median of yearly mean discharges, 43 ft³/s (1.22 m³/s), 31,200 acre-ft/yr (38 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,600 ft³/s (45.3 m³/s) Apr. 15, gage height 6.73 ft (2.051 m), backwater from ice; minimum daily, 3.4 ft³/s (0.096 m³/s) Feb. 13-17.

Period of record: Maximum discharge, 16,600 ft³/s (470 m³/s) Apr. 18, 1950, gage height, 11.80 ft (3.597 m) from floodmarks, from rating curve extended above 7,200 ft³/s (204 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times each year 1945-47, 1953-55, 1959-64.

REMARKS.--Records good except those for the winter period, 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. Records of chemical analyses and suspended sediment discharge for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1438: 1948-50. WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	16	12	6.3	3.8	4.6	4.0	760	26	53	16	8.6
2	4.6	16	11	6.3	3.9	4.6	4.0	744	26	109	16	10
3	10	16	11	6.3	4.2	4.0	4.0	530	24	405	14	9.5
4	6.0	16	11	6.3	4.2	4.0	3.8	400	24	405	11	9.5
5	12	16	11	6.3	4.0	4.6	3.5	319	22	272	12	10
6	14	16	11	6.2	3.8	4.6	3.5	264	22	232	12	9.5
7	14	16	11	6.2	4.0	4.6	3.5	221	21	250	12	7.7
8	16	16	10	6.2	3.6	5.3	3.5	187	20	214	11	6.8
9	15	16	10	6.2	3.5	5.3	3.5	164	20	178	11	6.8
10	15	16	10	6.2	3.6	5.3	5.0	144	21	149	12	6.8
11	15	17	9.5	6.2	3.5	5.3	15	123	28	125	12	6.8
12	15	16	9.5	6.2	3.6	5.3	20	109	34	109	10	6.0
13	14	12	8.6	6.2	3.4	5.3	160	103	30	103	9.5	6.0
14	14	12	8.6	6.0	3.4	5.3	551	95	24	93	8.6	6.0
15	14	14	8.6	6.0	3.4	6.0	771	87	22	82	8.6	6.0
16	14	12	8.6	6.0	3.4	6.0	1290	85	21	72	8.6	6.0
17	16	15	7.6	6.0	3.4	6.0	1000	80	21	65	7.7	6.0
18	17	17	7.0	6.0	3.5	7.7	895	70	21	55	8.6	6.0
19	15	16	7.0	6.0	3.5	7.7	666	60	28	48	6.8	5.3
20	15	16	7.0	6.0	3.5	6.0	431	54	30	46	5.0	4.6
21	14	16	7.0	5.8	3.5	7.7	321	48	35	42	6.8	5.3
22	12	16	6.8	5.7	3.5	6.8	315	44	40	37	7.7	6.0
23	14	15	6.5	5.6	3.6	6.0	292	46	42	32	7.7	6.0
24	12	14	6.5	5.6	3.6	6.0	238	48	45	32	5.8	6.0
25	12	12	6.5	5.5	3.7	6.0	200	44	42	30	6.8	5.3
26	16	11	6.5	5.3	4.0	5.5	169	42	44	26	6.0	5.3
27	15	14	6.5	5.3	4.0	5.0	145	39	39	22	6.0	4.6
28	14	14	6.5	5.3	4.0	5.0	161	35	35	21	6.0	4.6
29	14	12	6.5	5.3	---	4.5	228	32	30	20	6.0	4.6
30	15	12	6.5	4.9	---	4.5	650	30	30	18	6.8	4.6
31	15	---	6.5	4.3	---	4.5	---	28	---	17	7.7	---
TOTAL	412.6	443	262.3	181.7	103.1	169.0	8556.3	5035	867	3362	287.7	196.2
MEAN	13.3	14.8	8.46	5.86	3.68	5.45	285	162	28.9	108	9.28	6.54
MAX	17	17	12	6.3	4.2	7.7	1290	760	45	405	16	10
MIN	4.0	11	6.5	4.3	3.4	4.0	3.5	28	20	17	6.0	4.6
AC-FT	818	879	520	360	204	335	16970	9990	1720	6670	571	389
CAL YR 1974	TOTAL	43096.47	MEAN	118	MAX	2920	MIN	.45	AC-FT	85480		
WTR YR 1975	TOTAL	19875.90	MEAN	54.5	MAX	1290	MIN	3.4	AC-FT	39420		

PEAK DISCHARGE (BASE, 200 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-15	--	--	1,600	7- 3	1545	2.97	634
5- 2	0815	3.36	832				

05088500 HOMME LAKE NEAR PARK RIVER, N. DAK.

LOCATION.--Lat 48°24'20", long 97°47'10", in SE¼NW¼ sec.19, T.157 N., R.55 W., Walsh County, at Homme Dam on South Branch Park River, 2 mi (3 km) west of town of Park River.

DRAINAGE AREA.--226 mi² (585 km²).

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level.

EXTREMES.--Current year: Maximum contents during year, 4,080 acre-ft (5.03 hm³) July 1, elevation, 1,081.95 ft (329.778 m); minimum, 1,960 acre-ft (2.42 hm³) Apr. 12, elevation, 1,070.50 ft (326.288 m).
Period of record: Maximum contents, 4,498 acre-ft (5.55 hm³) Apr. 11, 1965, elevation, 1,083.70 ft (330.312 m); minimum since first reaching spillway level, 184 acre-ft (0.23 hm³) Feb. 8, 1952, elevation, 1,051.22 ft (320.412 m).

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 (319.430 m), and crest of spillway, elevation, 1,080 ft (329.184 m), is 3,550 acre-ft (4.38 hm³). Dead storage is 100 acre-ft (0.12 hm³). 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.

REVISIONS.--WSP 1728: Drainage area.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30-----	1,078.96	3,460	
Oct. 31-----	1,079.35	3,540	+80
Nov. 30-----	1,078.18	3,310	-230
Dec. 31-----	1,075.31	2,770	-540
CAL YR 1974-----	--	--	+120
Jan. 31-----	1,073.47	2,420	-350
Feb. 2-----	1,072.48	2,250	-170
Mar. 31-----	1,071.12	2,050	-200
Apr. 30-----	1,080.96	3,840	+1,790
May 31-----	1,079.97	3,650	-190
June 30-----	1,080.03	3,660	+10
July 31-----	1,079.92	3,640	-20
Aug. 31-----	1,079.79	3,620	-20
Sept. 30-----	1,078.98	3,470	-150
WTR YR 1975-----	--	--	+10

RED RIVER OF THE NORTH BASIN

05089000 SOUTH BRANCH PARK RIVER BELOW HOMME DAM, N. DAK.

LOCATION.--Lat 48°24'07", long 97°46'55", in SE¼ sec.19, T.157 N., R.55 W., Walsh County, 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 mi² (585 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 1,000.00 ft (304.800 m) above mean sea level.

AVERAGE DISCHARGE.--26 years, 27.4 ft³/s (0.776 m³/s), 19,850 acre-ft/yr (24.5 hm³/yr); median of yearly mean discharges, 21 ft³/s (0.59 m³/s), 15,200 acre-ft/yr (19 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,300 ft³/s (36.8 m³/s) July 1, gage height 27.19 ft (8.288 m); minimum daily, 0.46 ft³/s (0.013 m³/s) Nov. 13.

Period of record: Maximum discharge, about 13,000 ft³/s (368 m³/s) Apr. 24, 1950, gage height, 37.52 ft (11.436 m), from rating curve extended above 5,500 ft³/s (156 m³/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.

REMARKS.--Records good, except those for the winter period, which are fair. Flow regulated by Homme Lake (see station 05088500). Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	1.2	13	6.5	4.5	3.5	6.0	374	5.8	76	1.4	1.8
2	2.6	1.0	13	6.4	4.5	3.5	6.0	171	5.8	856	1.3	1.7
3	2.5	1.0	13	6.3	4.1	3.5	6.0	117	5.8	346	1.3	1.7
4	2.4	.91	13	6.3	4.1	3.5	6.0	94	5.8	156	1.3	1.8
5	2.4	.91	13	6.1	4.1	3.5	6.0	71	7.9	117	1.3	1.6
6	2.3	.91	13	6.1	4.0	3.5	6.0	57	3.0	80	1.3	1.7
7	2.3	.53	13	6.1	4.0	3.5	6.0	52	2.2	52	1.3	1.9
8	2.3	.61	13	6.1	4.0	3.5	6.0	52	2.9	34	1.3	2.1
9	2.1	.61	13	5.9	4.0	3.5	6.0	50	4.7	23	1.3	2.1
10	2.0	.61	13	5.7	3.7	3.5	6.0	8.9	8.5	17	1.3	2.1
11	2.8	.53	13	5.6	3.7	3.5	6.0	15	7.0	3.5	1.3	2.1
12	2.9	.53	13	5.6	3.5	3.5	6.0	19	7.6	1.0	1.3	1.9
13	2.6	.46	13	5.6	3.5	3.5	6.0	19	7.9	.91	1.5	1.9
14	2.5	6.5	9.4	5.6	3.5	3.5	92	18	4.1	1.0	1.5	1.9
15	2.2	14	7.4	5.5	3.5	3.5	335	15	4.8	1.0	1.5	2.1
16	2.2	14	7.4	5.5	3.5	3.5	293	14	5.2	1.0	1.5	2.7
17	2.2	14	7.3	5.5	3.5	4.0	273	16	5.8	1.0	1.5	2.7
18	2.1	14	7.3	5.4	3.5	5.0	136	14	5.4	1.0	1.5	2.7
19	1.8	14	7.3	5.5	3.5	5.5	53	14	5.4	1.0	1.5	2.9
20	1.7	14	7.3	5.4	3.5	6.3	52	14	6.3	1.0	1.3	2.9
21	1.7	14	7.3	5.2	3.5	6.3	52	12	6.3	1.6	1.3	2.7
22	1.7	14	7.0	5.3	3.5	6.3	54	10	10	1.0	1.3	3.0
23	1.8	14	7.0	5.0	3.5	6.3	99	12	7.6	1.3	1.2	3.0
24	1.8	14	7.0	4.9	3.5	6.3	111	13	7.9	1.5	1.7	3.0
25	1.8	14	7.1	4.7	3.5	6.2	90	14	7.0	1.5	1.9	2.7
26	1.7	14	7.0	4.7	3.5	6.0	74	12	7.3	1.5	1.6	2.7
27	1.6	14	6.8	4.8	3.5	6.0	66	6.8	4.7	1.4	1.0	2.9
28	1.6	14	6.7	4.7	3.5	6.0	94	6.3	4.7	1.4	1.6	2.9
29	1.5	13	6.7	4.5	---	6.0	223	10	5.0	1.4	1.8	2.9
30	1.3	13	6.6	4.5	---	6.0	416	6.5	7.0	1.4	1.9	3.4
31	1.2	---	6.4	4.5	---	6.0	---	6.1	---	1.4	1.7	---
TOTAL	64.4	238.31	298.0	169.5	104.2	144.2	2591.0	1313.6	179.4	1784.81	44.5	71.5
MEAN	2.08	7.94	9.61	5.47	3.72	4.65	86.4	42.4	5.98	57.6	1.44	2.38
MAX	2.9	14	13	6.5	4.5	6.3	416	374	10	856	1.9	3.4
MIN	1.2	.46	6.4	4.5	3.5	3.5	6.0	6.1	2.2	.91	1.0	1.6
AC-FT	128	473	591	336	207	286	5140	2610	356	3540	88	142

CAL YR 1974 TOTAL 24357.10 MEAN 66.7 MAX 2300 MIN .46 AC-FT 48310
WTR YR 1975 TOTAL 7003.42 MEAN 19.2 MAX 856 MIN .46 AC-FT 13890

RED RIVER OF THE NORTH BASIN

75

05089100 MIDDLE BRANCH PARK RIVER NEAR UNION, N. DAK.

LOCATION.--Lat 48°32'32", long 98°01'10", on north line of sec.5, T.158 N., R.57 W., Walsh County, on left bank 20 ft (6 m) downstream from bridge on county highway between Walsh and Cavalier Counties, 3.5 mi (5.6 km) southwest of Union.

DRAINAGE AREA.--15.3 mi² (39.6 km²).

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--10 years, 2.45 ft³/s (0.0694 m³/s) 1,780 acre-ft/yr (2.19 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 74 ft³/s (2.10 m³/s) Apr. 15, gage height, 5.00 ft (1.524 m), from graph of outside staff readings, maximum gage height, 5.21 ft (1.588 m) Apr. 11, backwater from ice; no flow on many days.

Period of record: Maximum discharge, 687 ft³/s (19.5 m³/s) May 6, 1967, gage height, 7.22 ft (2.201 m), from floodmark; maximum gage height, 7.51 ft (2.289 m) May 4, 1966, from floodmark, backwater from snow-drift; no flow for several months each year.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.12	0			0	0	8.4	.20	6.4	.09	.10
2	.08	.12	0			0	0	5.2	.17	6.5	.10	.09
3	.08	.10	0			0	0	4.1	.17	3.9	.09	.08
4	.08	.10	0			0	0	3.4	.15	2.0	.09	.06
5	.08	.10	0			0	0	2.8	.12	1.4	.09	.06
6	.09	.10	0			0	0	2.3	.10	.69	.10	.07
7	.09	.10	.01			0	.05	1.7	.09	.37	.09	.08
8	.09	.10	.02			0	.10	1.5	.08	.23	.09	.07
9	.09	.10	.03			0	.15	1.5	.10	.17	.08	.07
10	.09	.10	.04			0	.18	1.2	.23	.17	.07	.07
11	.09	.10	.04			0	.20	.97	.17	.10	.07	.07
12	.09	.08	.03			0	1.2	.83	.13	.10	.07	.07
13	.09	.07	.03			0	5.7	.83	.10	.10	.07	.03
14	.09	.06	.03			0	6.6	.77	.10	.10	.07	.06
15	.09	.05	.03			0	40	.77	.09	.10	.07	.07
16	.09	.04	.02			0	20	.69	.09	.10	.07	.09
17	.09	.04	.02			.10	10	.57	.09	.09	.07	.10
18	.09	.04	.02			.58	7.0	.57	.09	.09	.07	.23
19	.09	.04	.02			.15	6.0	.57	.10	.09	.07	.12
20	.09	.04	.01			.16	5.0	.42	.08	.09	.07	.09
21	.09	.03	.01			.10	5.5	.42	.10	.09	.07	.09
22	.09	.03	.01			.08	6.0	.42	4.7	.09	.07	.08
23	.23	.01	.01			.06	7.0	.42	4.9	.10	.06	.06
24	.12	0	.01			.04	6.5	.42	4.3	.12	.02	.06
25	.09	0	0			.02	5.3	.37	4.1	.12	.06	.06
26	.09	0	0			.02	4.6	.32	4.0	.12	.08	.04
27	.09	0	0			.01	4.9	.32	3.9	.12	.03	.04
28	.09	0	0			.01	10	.29	3.8	.12	.01	.06
29	.09	0	0			.01	22	.26	3.8	.08	.02	.06
30	.25	0	0		---	0	15	.23	4.0	.09	.06	.06
31	.13	---	0		---	0	---	.23	---	.09	.13	---
TOTAL	3.11	1.67	.39	0	0	1.34	188.98	42.79	40.05	23.93	2.20	2.29
MEAN	.10	.056	.013	0	0	.043	6.30	1.38	1.34	.77	.071	.076
MAX	.25	.12	.04	0	0	.58	40	8.4	4.9	6.5	.13	.23
MIN	.08	0	0	0	0	0	0	.23	.08	.08	.01	.03
AC-FT	6.2	3.3	.8	0	0	2.7	375	85	79	47	4.4	4.5

CAL YR 1974 TOTAL 1711.41 MEAN 4.69 MAX 280 MIN 0 AC-FT 3390
WTR YR 1975 TOTAL 306.75 MEAN .84 MAX 40 MIN 0 AC-FT 608

PEAK DISCHARGE (BASE, 20 FT³/S).--Apr. 15, 74 FT³/S; Apr. 29 (1900) 46 FT³/S (2.63 FT).

RED RIVER OF THE NORTH BASIN

05089500 CART CREEK AT MOUNTAIN, N. DAK.

LOCATION.--Lat 48°40'37", long 97°51'41", in SW¼ sec.15, T.160 N., R.56 W., Pembina County, 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 mi² (43.8 km²).

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) above mean sea level.

AVERAGE DISCHARGE.--21 years, 2.86 ft³/s (0.0810 m³/s) 2,070 acre-ft/yr (2.55 hm³/yr); median of yearly mean discharges, 3.0 ft³/s (0.085 m³/s) 2,200 acre-ft/yr (2.7 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 49 ft³/s (1.39 m³/s) Apr. 28, gage height, 2.85 ft (0.869 m), from graph based on gage readings; maximum gage height observed, 3.46 ft (1.055 m), backwater from ice; no flow many days.

Period of record: Maximum discharge, 1,300 ft³/s (36.8 m³/s) June 18, 1964, gage height, 9.18 ft (2.798 m); no flow at times in some years.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.31	.42	.20	.06	.06	.04	.10	17	1.0	.47		
2	.34	.47	.20	.06	.06	.04	.10	11	1.2	.47		
3	.38	.58	.20	.06	.06	.04	.10	8.6	1.4	.42		
4	.38	.47	.20	.06	.06	.04	.10	7.8	1.2	.34		
5	.38	.47	.20	.06	.06	.04	.10	7.5	.95	.31		
6	.64	.58	.20	.06	.06	.04	.10	7.5	.78	.25		
7	.58	.47	.20	.06	.06	.04	.10	6.6	.78	.19		
8	.58	.47	.15	.06	.04	.04	.10	6.0	.78	.16		
9	.47	.42	.15	.06	.04	.04	.15	5.1	1.2	.14		
10	.47	.38	.15	.06	.04	.04	.20	4.6	3.0	.14		
11	.47	.38	.15	.06	.04	.04	.28	3.4	1.2	.10		
12	.47	.38	.15	.06	.04	.04	1.0	3.2	.86	.10		
13	.47	.42	.15	.06	.04	.04	5.0	3.2	.78	.06		
14	.52	.50	.15	.06	.04	.04	25	3.2	.71	0		
15	.52	.50	.15	.06	.04	.06	20	2.2	.58	0		
16	.52	.50	.15	.06	.04	.20	20	2.0	.58	0		
17	.52	.50	.15	.06	.04	.75	18	2.4	.95	0		
18	.52	.50	.15	.06	.04	1.2	17	2.0	.58	0		
19	.52	.50	.15	.06	.04	1.8	14	2.0	.58	0		
20	.47	.50	.10	.06	.04	1.6	2.4	1.8	.78	0		
21	.47	.45	.10	.06	.04	1.5	18	1.7	.58	0		
22	.52	.45	.10	.06	.04	.70	23	1.6	2.2	0		
23	.42	.45	.10	.06	.04	.70	18	2.0	5.1	0		
24	.42	.40	.10	.06	.04	.60	24	1.8	2.4	0		
25	.42	.40	.10	.06	.04	.50	15	1.6	1.6	0		
26	.42	.40	.10	.06	.04	.30	14	1.4	1.0	0		
27	.42	.35	.08	.06	.04	.10	17	1.4	.64	0		
28	.42	.30	.08	.06	.04	.10	34	1.4	.47	0		
29	.42	.25	.06	.06	---	.10	35	1.2	.58	0		
30	.42	.20	.06	.06	---	.10	23	1.2	.42	0		
31	.42	---	.06	.06	---	.10	---	1.0	---	0		---
TOTAL	14.30	13.06	4.24	1.86	1.26	10.97	344.83	123.4	34.88	3.15	0	0
MEAN	.46	.44	.14	.060	.045	.35	11.5	3.98	1.16	.10	0	0
MAX	.64	.58	.20	.06	.06	1.8	35	17	5.1	.47	0	0
MIN	.31	.20	.06	.06	.04	.04	.10	1.0	.42	0	0	0
AC-FT	28	26	8.4	3.7	2.5	22	684	245	69	6.2	0	0

CAL YR 1974 TOTAL 2179.38 MEAN 5.97 MAX 210 MIN 0 AC-FT 4320
WTR YR 1975 TOTAL 551.95 MEAN 1.51 MAX 35 MIN 0 AC-FT 1090

PEAK DISCHARGE (BASE, 30 FT³/S).--Apr. 14, 40 FT³/S; Apr. 28 (2000) 49 FT³/S (2.85 FT).

05090000 PARK RIVER AT GRAFTON, N. DAK.

LOCATION.--Lat 48°25'24", long 97°24'30", in NE¼ sec.13, T.157 N., R.53 W., Walsh County, 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 mi² (1,800 km²), approximately.

PERIOD OF RECORD.--April 1931 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 807.39 ft (246.092 m) above mean sea level. 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.

AVERAGE DISCHARGE (UNADJUSTED).--44 years (1931-75), 57.3 ft³/s (1.623 m³/s) 41,510 acre-ft/yr (51.2 hm³/yr); median of yearly mean discharges, 38 ft³/s (1.08 m³/s) 27,500 acre-ft/yr (34 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 900 ft³/s (25.5 m³/s) Apr. 17, gage height, 11.10 ft (3.383 m) backwater from ice; minimum discharge, 0.20 ft³/s (0.006 m³/s) for many days; minimum gage height, 6.02 ft (1.835 m) Oct. 3.

Period of record: Maximum discharge, 12,600 ft³/s (357 m³/s) Apr. 19, 1950, gage height, 20.13 ft (6.136 m) from rating curve extended above 9,000 ft³/s (255 m³/s); no flow at times in most years.

REMARKS.--Records good except those for the winter period and those below 1.0 ft³/s (0.028 m³/s), which are fair. Flow regulated by Homme Lake (see station 05088500) and several small reservoirs. Diversion by city of Grafton started in 1955. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 955: 1941. WSP 1438: 1932, 1933(M), 1936-37(M), 1939(M), 1944. WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.32	8.0	6.5	4.0	3.0	3.0	872	16	36	2.0	1.3
2	.20	.40	8.8	6.5	4.0	3.0	3.0	779	14	309	1.0	.60
3	.20	.32	9.6	6.5	3.8	3.0	3.0	575	15	575	1.0	.50
4	.20	.32	9.6	6.5	3.8	3.0	3.0	413	15	392	.80	.28
5	.20	.28	10	6.5	3.8	3.0	3.0	290	13	290	.80	.28
6	.20	.28	12	6.5	3.8	3.0	3.0	231	18	201	.60	.28
7	.20	.40	13	6.5	3.8	3.0	3.0	182	16	140	.40	.32
8	.20	.80	13	6.5	3.8	2.9	3.0	138	10	101	1.0	.25
9	.20	1.3	11	6.5	3.5	2.9	5.0	118	13	76	.50	.20
10	.20	.80	9.6	6.0	3.5	2.9	7.0	90	15	58	.32	.20
11	.20	1.0	10	5.5	3.2	2.9	10	66	18	46	.32	.20
12	.20	.80	10	5.1	3.0	2.9	22	59	19	37	.32	.20
13	.20	.50	10	5.1	3.0	2.9	40	62	21	29	.30	.20
14	.20	.50	10	5.1	3.0	2.9	70	56	20	25	.30	.20
15	.20	.60	9.5	4.8	3.0	2.9	550	53	18	21	.30	.20
16	.22	.50	9.0	4.5	3.0	4.0	740	52	12	17	.30	.20
17	.21	1.0	8.5	4.5	3.0	4.5	880	48	10	16	.30	.20
18	.21	7.2	8.0	4.5	3.0	5.0	820	44	10	14	.30	.20
19	.21	8.0	7.2	4.4	3.0	4.8	580	43	13	12	.30	.20
20	.22	8.8	7.2	4.4	3.0	4.5	430	39	14	11	.30	.20
21	.21	8.8	7.2	4.3	3.0	4.5	338	39	12	10	.30	.20
22	.22	8.0	7.2	4.2	3.0	4.5	323	36	22	8.8	.30	.20
23	.21	8.8	7.2	4.2	3.0	4.5	247	33	20	8.0	.30	.20
24	.21	8.0	7.2	4.2	3.0	4.5	247	30	21	7.2	.30	.20
25	.20	8.8	7.2	4.2	3.0	4.0	236	30	17	5.8	.30	.20
26	.20	8.8	6.5	4.2	3.0	4.0	221	29	17	6.5	.30	.20
27	.21	9.6	6.5	4.0	3.0	4.0	199	29	15	5.1	.30	.20
28	.25	8.8	6.5	4.0	3.0	4.0	218	28	15	3.8	.30	.20
29	.25	8.8	6.5	4.0	---	4.0	449	21	8.8	3.2	.30	.20
30	.28	8.0	6.5	4.0	---	4.0	722	19	15	1.6	.30	.20
31	.22	---	6.5	4.0	---	3.5	---	19	---	2.0	1.0	---
TOTAL	6.53	120.52	269.0	57.7	92.0	112.5	7378.0	4523	462.8	2468.0	15.46	8.21
MEAN	.21	4.02	8.68	5.09	3.29	3.63	246	146	15.4	79.6	.50	.27
MAX	.28	9.6	13	6.5	4.0	5.0	880	872	22	575	2.0	1.3
MIN	.20	.28	6.5	4.0	3.0	2.9	3.0	19	8.8	1.6	.30	.20
AC-FT	13	239	534	313	182	223	14630	8970	918	4900	31	16
(+)	64	58	59	60	54	59	60	59	59	71	67	62
MEAN*	1.24	5.00	9.63	6.07	4.26	4.59	247	147	16.4	80.8	1.59	1.31
AC-FT*	76	298	592	373	237	282	14700	9040	976	4970	98	78

OBSERVED				ADJUSTED			
CAL YR 1974	TOTAL	57763.33	MEAN 158	MAX 3030	MIN .20	AC-FT 114600	MEAN 159
WTR YR 1975	TOTAL	15613.72	MEAN 42.8	MAX 880	MIN .20	AC-FT 30970	MEAN 43.8
							AC-FT 115300

* Diversion in acre-feet by city of Grafton.

* Adjusted for diversion by city of Grafton.

RED RIVER OF THE NORTH BASIN

05092000 RED RIVER OF THE NORTH AT DRAYTON, N. DAK.

LOCATION.--Lat 48°34'20", long 97°08'50", in SE4SE4SE4 sec.24, T.159 N., R.51 W., Pembina County, on downstream end of east pier of interstate highway bridge, 1.5 mi (2.4 km) northeast of Drayton and at mile 206.7 (kilometre 332.6).

DRAINAGE AREA.--34,800 mi² (90,130 km²), approximately, includes 3,800 mi² (9,840 km²) in closed basins.

PERIOD OF RECORD.--April 1936 to June 1937, April 1941 to current year (fragmentary prior to April 1949).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 755.00 ft (230.124 m) above mean sea level (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.

AVERAGE DISCHARGE.--26 years (1949-75) 3,898 ft³/s (110.4 m³/s) 2,824,000 acre-ft/yr (3.48 km³/yr); median of yearly mean discharges, 2,650 ft³/s (75.0 m³/s) 1,920,000 acre-ft/yr (2.4 km³/yr).

EXTREMES.--Current year: Maximum discharge, 44,000 ft³/s (1,250 m³/s) May 4; gage height, 39.80 ft (12.131 m) minimum daily discharge, 1,010 ft³/s (28.6 m³/s) Jan. 19, gage height, 10.05 ft (3.063 m).

Period of record: Maximum discharge, 86,500 ft³/s (2,450 m³/s) May 12, 1950, gage height, 41.58 ft (12.674 m), former site and datum; minimum observed, 7.7 ft³/s (0.22 m³/s) Oct. 16, 1936, gage height, 1.75 ft (0.533 m), former site and datum.

Maximum discharge known since 1860, that of May 12, 1950. 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.

REMARKS.--Records good. Some regulation by reservoirs on tributaries. Records of chemical analyses and water temperatures for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1388: 1949-50. WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1700	2050	1200	1400	1400	1450	2290	43000	5400	14600	12300	2590
2	1690	2060	1200	1400	1400	1450	2280	43600	5300	16900	10300	2520
3	1660	2060	1200	1400	1400	1400	2260	43700	5100	18700	8700	2470
4	1650	2100	1200	1400	1400	1400	2240	44000	5000	20500	7100	2230
5	1670	2100	1200	1390	1420	1400	2210	42200	4900	22700	5920	2210
6	1690	2500	1200	1390	1420	1400	2180	40700	4800	24400	5340	2310
7	1700	2830	1200	1400	1420	1400	2100	39100	4700	26100	4700	2420
8	1750	2820	1200	1390	1420	1400	2040	37100	4600	27100	4090	2540
9	1790	2820	1200	1380	1420	1400	2030	35000	4520	29600	3790	2650
10	1830	2800	1200	1400	1420	1400	2040	34200	4430	30800	3560	2720
11	1870	2800	1220	1400	1420	1450	2160	31100	4320	31400	3380	2760
12	1990	2770	1240	1350	1430	1450	2770	28400	4280	31900	3200	2780
13	2000	2710	1250	1340	1450	1500	4270	25300	4200	32200	3090	2780
14	2000	2620	1230	1350	1450	1500	7000	23200	4130	32500	2980	2760
15	2000	2500	1250	1320	1450	1500	9560	21500	4110	33300	2920	2700
16	2000	2410	1300	1290	1450	1500	12200	19900	4090	33900	2860	2690
17	2020	2140	1300	1190	1450	1500	15900	18400	4090	34800	2770	2640
18	2040	1840	1300	1080	1450	1500	18300	17100	4050	35500	2740	2600
19	2090	1730	1300	1010	1450	1500	22200	15700	3930	36600	2700	2460
20	2160	1830	1310	1060	1450	1500	24100	14300	3890	37000	2660	2420
21	2160	1970	1340	1150	1450	1600	26700	12900	3870	37300	2620	2380
22	2160	2000	1370	1200	1450	1700	29100	11800	4070	36800	2600	2350
23	2160	1950	1390	1300	1450	1850	30700	10500	5800	35000	2620	2350
24	2140	1600	1390	1400	1450	1950	31800	9500	6970	33000	2620	2350
25	2130	1230	1390	1400	1450	2100	34000	8400	8770	30500	2620	2320
26	2100	1120	1390	1400	1450	2400	36100	7600	10100	28300	2640	2300
27	2090	1170	1390	1400	1450	2400	37000	7000	11100	26000	2650	2280
28	2070	1230	1350	1400	1450	2350	39800	6600	12000	23600	2660	2280
29	2060	1210	1340	1400	---	2320	41000	6200	12800	20800	2680	2270
30	2060	1200	1350	1400	---	2300	42100	5900	13800	18000	2650	2240
31	2040	---	1390	1400	---	2300	---	5800	---	15600	2620	---
TOTAL	60470	62370	39790	41190	40170	52270	488430	709700	179120	875400	124080	74360
MEAN	1951	2079	1284	1329	1435	1686	16280	22890	5971	28240	4003	2479
MAX	2160	2830	1390	1400	1450	2400	42100	44000	13800	37300	12300	2780
MIN	1650	1120	1200	1010	1400	1400	2030	5800	3870	14600	2600	2210
AC-FT	119900	123700	78920	81700	79680	103700	968800	1408000	355300	1736000	246100	147500
CAL YR 1974 TOTAL	1950900			MEAN 5345	MAX 43500	MIN 1120	AC-FT 3870000					
WTR YR 1975 TOTAL	2747350			MEAN 7527	MAX 44000	MIN 1010	AC-FT 5449000					

RED RIVER OF THE NORTH BASIN

79

05092200 PEMBINA COUNTY DRAIN 20 NEAR GLASSTON, N. DAK.

LOCATION.--Lat 48°41'49", long 97°23'03", in NW¼ sec.8, T.160 N., R.52 W., Pembina County, on left bank 50 ft (15 m) downstream from bridge on county highway 3 mi (5 km) southeast of Glasston.

DRAINAGE AREA.--40.7 mi² (105 km²).

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 808 ft (246 m) above mean sea level, from topographic map.

EXTREMES.--Current year: Maximum discharge, 73 ft³/s (2.07 m³/s) Apr. 30, gage height, 5.70 ft (1.737 m);

no flow most of year.

Period of record: Maximum discharge, 212 ft³/s (6.00 m³/s) Apr. 23, 1974, gage height, 7.19 ft (2.192 m);

no flow most of time.

REMARKS.--Records good. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	57				
2							0	33				
3							0	16				
4							0	8.7				
5							0	3.4				
6							0	1.5				
7							0	.47				
8							0	.17				
9							0	.08				
10							0	.07				
11							0	.04				
12							0	0				
13							0	0				
14							0	0				
15							0	0				
16							5.0	0				
17							15	0				
18							19	0				
19							22	0				
20							30	0				
21							35	0				
22							24	0				
23							13	0				
24							6.0	0				
25							3.1	0				
26							1.5	0				
27							.78	0				
28							8.9	0				
29							49	0				
30							69	0				
31		---			---	---	---	0	---			---
TOTAL	0	0	0	0	0	0	301.28	120.43	0	0	0	0
MEAN	0	0	0	0	0	0	10.0	3.88	0	0	0	0
MAX	0	0	0	0	0	0	69	57	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	0	0	0	598	239	0	0	0	0
CAL YR 1974	TOTAL	2535.97	MEAN 6.95	MAX 206	MIN 0	AC-FT 5030						
WTR YR 1975	TOTAL	421.71	MEAN 1.16	MAX 69	MIN 0	AC-FT 836						

PEAK DISCHARGE (BASE, 25 FT³/S).--Apr. 21, 52 FT³/S; Apr. 30 (1500) 73 FT³/S (5.70 FT).

RED RIVER OF THE NORTH BASIN

05098700 HIDDEN ISLAND COULEE NEAR HANSBORO, N. DAK.
(International gaging station)

LOCATION.--Lat 48°57'10", long 99°25'35", in SE&SW¼ sec.11, T.163 N., R.68 W., Towner County, on right bank 400 ft (122 m) downstream from bridge on county highway 2.5 mi (4 km) west of Hansboro.

DRAINAGE AREA.--38 mi² (98 km²), approximately.

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Prior to May 20, 1962, nonrecording gage 400 ft (122 m) upstream at same datum.

AVERAGE DISCHARGE.--14 years, 4.05 ft³/s (0.115 m³/s), 2,930 acre-ft/yr (3.61 hm³/yr); median of yearly mean discharges, 3.1 ft³/s (0.088 m³/s), 2,200 acre-ft/yr (2.7 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 405 ft³/s (11.5 m³/s) Apr. 28, gage height, 7.93 ft (2.417 m); maximum gage height observed, 8.90 ft (2.712 m) Apr. 14, backwater from ice and snow; no flow for several months.

Period of record: Maximum discharge, 1,060 ft³/s (30.0 m³/s) Apr. 21, 1974, gage height, 8.61 ft (2.624 m); maximum gage height observed, 8.90 ft (2.713 m) Apr. 14, 1975; no flow for several months each year.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	88	1.1	0		
2							0	66	.90	0		
3							0	38	.90	0		
4							0	25	.70	0		
5							0	13	.60	0		
6							0	6.7	.40	0		
7							0	4.8	.44	0		
8							0	3.8	.90	0		
9							0	3.4	1.2	0		
10							0	3.0	.80	0		
11							.50	2.3	.72	0		
12							2.0	2.0	.47	0		
13							160	1.9	.38	0		
14							350	1.8	.26	0		
15							295	1.6	.20	0		
16							195	1.5	.89	0		
17							120	1.4	2.4	0		
18							85	1.3	1.2	0		
19							67	1.2	.92	0		
20							60	1.3	.86	0		
21							51	1.3	.77	0		
22							40	1.5	.77	.04		
23							26	1.6	.60	1.0		
24							23	1.4	.47	.40		
25							20	1.4	.35	.02		
26							26	1.4	.22	0		
27							64	1.4	.09	0		
28							186	1.4	.05	0		
29							232	1.4	.02	0		
30							132	1.4	0	0		
31		---				---	---	1.4	---	0		---
TOTAL	0	0	0	0	0	0	2134.50	283.6	19.58	1.46	0	0
MEAN	0	0	0	0	0	0	71.2	9.15	.65	.047	0	0
MAX	0	0	0	0	0	0	350	88	2.4	1.0	0	0
MIN	0	0	0	0	0	0	0	1.2	0	0	0	0
AC-FT	0	0	0	0	0	0	4230	563	39	2.9	0	0

CAL YR 1974 TOTAL 5048.78 MEAN 13.8 MAX 833 MIN 0 AC-FT 10010
WTR YR 1975 TOTAL 2439.14 MEAN 6.68 MAX 350 MIN 0 AC-FT 4840

PEAK DISCHARGE (BASE, 25 FT³/S).--Apr. 14, 390 FT³/S; Apr. 28 (2200) 405 FT³/S (7.93 FT).

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

RED RIVER OF THE NORTH BASIN

81

05098800 CYPRESS CREEK NEAR SARLES, N. DAK.
(International gaging station)

LOCATION.--Lat 48°56'35", long 98°57'05", in SW¼SE¼ sec.9, T.163 N., R.64 W., Cavalier County, on right bank 150 ft (46 m) downstream from twin multiplate culverts on county highway, 2.5 mi (4.0 km) east of Sarles.

DRAINAGE AREA.--71 mi² (184 km²), approximately.

PERIOD OF RECORD.--May 1961 to current year. Prior to October 1973, published as Long River near Sarles.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--14 years, 7.06 ft³/s (0.200 m³/s), 5,110 acre-ft/yr (6.30 hm³/yr); median of yearly mean discharges, 4.9 ft³/s (0.14 m³/s), 3,600 acre-ft/yr (4.4 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 389 ft³/s (11.0 m³/s) Apr. 13, gage height, 5.75 ft (1.753 m); no flow for several months.
Period of record: Maximum discharge, 1,920 ft³/s (54.4 m³/s) Apr. 10, 1971, gage height, 8.56 ft (2.609 m); no flow for several months each year.

REMARKS.--Records good, except those for the period of ice effect which are fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	31	.18	5.9		
2							0	25	.12	11		
3							0	17	.10	10		
4							0	11	.07	6.6		
5							0	7.9	.06	5.2		
6							0	5.7	.04	4.1		
7							0	4.1	.01	2.7		
8							0	3.0	.20	1.7		
9							0	2.4	.50	.86		
10							0	1.8	.12	.56		
11							11	1.4	.12	.35		
12							200	.93	.10	.23		
13							190	.80	.09	.16		
14							100	.68	.07	.09		
15							78	.62	.04	.04		
16							88	.56	.03	0		
17							63	.45	.01	0		
18							38	.40	0	0		
19							23	.40	0	0		
20							17	.35	25	0		
21							17	.35	80	0		
22							14	.31	69	0		
23							13	.45	55	0		
24							11	.80	36	0		
25							10	1.3	20	0		
26							9.0	1.7	8.0	0		
27							9.0	1.1	6.6	0		
28							28	.86	4.3	0		
29					---		60	.62	4.8	0		
30					---		46	.40	4.7	0		
31		---			---		---	.31	---	0		---
TOTAL	0	0	0	0	0	0	1025.0	123.69	315.26	49.49	0	0
MEAN	0	0	0	0	0	0	34.2	3.99	10.5	1.60	0	0
MAX	0	0	0	0	0	0	200	31	80	11	0	0
MIN	0	0	0	0	0	0	0	.31	0	0	0	0
AC-FT	0	0	0	0	0	0	2030	245	625	98	0	0
CAL YR 1974	TOTAL	6465.88	MEAN	17.7	MAX	1030	MIN	0	AC-FT	12830		
WTR YR 1975	TOTAL	1513.44	MEAN	4.15	MAX	200	MIN	0	AC-FT	3000		

PEAK DISCHARGE (BASE, 50 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-13	1200	5.75	390	4-29	1300	3.65	55
4-16	1400	4.08	107	6-20	2300	4.29	174

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

RED RIVER OF THE NORTH BASIN

05099100 SNOWFLAKE CREEK NEAR SNOWFLAKE, MANITOBA
(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 mi² (901 km²).

PERIOD OF RECORD.--March 1961 to current year.

GAGE.--Water-stage recorder since March 1968 and nonrecording gage prior thereto. Datum of gage is 1,222.63 ft (372.658 m) above mean sea level, 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.

AVERAGE DISCHARGE.--14 years, 17.2 ft³/s (0.487 m³/s) 12,460 acre-ft/yr (15.4 hm³/yr); median of yearly mean discharges, 12 ft³/s (0.34 m³/s) 8,690 acre-ft/yr (11 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 158 ft³/s (4.47 m³/s) Apr. 28, gage height, 2.98 ft (0.908 m); no flow for several months.

Period of record: Maximum discharge, 823 ft³/s (23.3 m³/s) May 21, 1974, gage height 5.98 ft (1.823 m); maximum gage height, 7.39 ft (2.252 m) Apr. 11, 1969; no flow for several months each year.

REMARKS.--Records good.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	3.9	1.5	.08		0	1.0	99	18	3.9	1.2	0
2	5.2	3.5	1.4	.06		0	.55	83	17	3.3	.74	0
3	5.4	3.4	1.7	.04		0	.19	69	17	2.9	.55	0
4	5.8	5.1	1.4	.02		0	.04	56	16	2.5	.15	0
5	5.3	4.1	.75	.01		0	0	52	16	2.7	.03	0
6	5.2	3.8	.53	.01		0	0	50	14	2.6	0	0
7	5.1	4.2	.36	.01		0	0	49	14	2.6	0	0
8	5.5	3.9	.25	.01		0	0	48	14	2.1	0	0
9	5.2	3.9	.23	.01		0	0	46	16	1.8	0	0
10	5.1	3.8	.96	.01		0	7.0	43	16	1.5	0	0
11	5.1	3.8	1.7	0		0	70	38	15	1.2	0	0
12	5.0	3.2	.47	0		0	72	38	14	.89	0	0
13	4.8	4.5	.25	0		0	75	38	13	.75	0	0
14	5.3	4.5	.01	0		0	37	35	11	.46	0	0
15	4.9	3.0	0	0		0	49	32	11	.28	0	0
16	4.8	2.3	0	0		0	29	33	12	.23	0	0
17	4.7	2.5	0	0		0	26	33	11	.17	0	.20
18	4.7	3.2	0	0		14	14	28	9.1	.17	0	.80
19	4.6	2.6	0	0		16	9.8	28	10	.03	0	1.2
20	4.6	2.6	0	0		12	16	22	12	0	0	1.0
21	4.4	2.7	0	0		12	28	19	12	0	0	.80
22	4.7	2.3	0	0		15	30	18	13	0	0	.50
23	4.2	2.3	0	0		13	16	21	11	0	0	.20
24	4.2	2.1	0	0		9.8	12	20	9.3	.02	0	.10
25	4.3	2.7	0	0		8.4	18	20	7.7	.03	0	.10
26	4.1	2.8	0	0		8.2	23	20	6.3	.02	0	.02
27	4.3	2.3	0	0		6.6	24	19	5.8	0	0	.02
28	4.2	1.8	1.1	0		5.5	75	19	4.9	0	0	.01
29	4.3	1.9	.74	0	---	3.8	79	18	4.4	0	0	.01
30	4.1	2.3	.25	0	---	2.7	68	18	4.4	0	0	.01
31	4.0	---	.10	0	---	1.8	---	18	---	.25	0	---
TOTAL	148.1	95.0	13.70	.26	0	128.8	779.58	1130	354.9	30.40	2.67	4.97
MEAN	4.78	3.17	.44	.008	0	4.15	26.0	36.5	11.8	.98	.086	.17
MAX	5.8	5.1	1.7	.08	0	16	79	99	18	3.9	1.2	1.2
MIN	4.0	1.8	0	0	0	0	0	18	4.4	0	0	0
AC-FT	294	188	27	.5	0	255	1550	2240	704	60	5.3	9.9

CAL YR 1974 TOTAL 24025.60 MEAN 65.8 MAX 672 MIN 0 AC-FT 47650
WTR YR 1975 TOTAL 2688.38 MEAN 7.37 MAX 99 MIN 0 AC-FT 5330

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05099150 MOWBRAY CREEK NEAR MOWBRAY, MANITOBA

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, 1.5 mi (2.4 km) east of Mowbray.

DRAINAGE AREA.--93.9 mi² (243.2 km²).

PERIOD OF RECORD.--March to October, 1962 to current year.

GAGE.--Nonrecording gage.

EXTREMES.--Current year: Maximum daily discharge, 59 ft³/s (1.67 m³/s) Apr. 15; maximum gage height, 4.49 ft (1.369 m) Apr. 15; no flow for several months.

Period of record: Maximum discharge, 670 ft³/s (19.0 m³/s) Apr. 21, 1974, 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.

REMARKS.--Records good.

COOPERATION.--Records furnished by Inland Waters Branch, Water Survey of Canada.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	40	.61	0		
2							0	47	.31	0		
3							0	51	.31	0		
4							0	40	.37	0		
5							0	28	.37	.05		
6							0	21	.25	.19		
7							0	18	.22	.10		
8							0	12	.16	.28		
9							0	6.4	.19	.37		
10							0	4.5	.31	.43		
11							1.0	3.2	.34	.43		
12							3.0	4.0	.34	.34		
13							7.2	5.3	.37	.19		
14							7.8	4.7	.31	.06		
15							59	5.7	.22	0		
16							32	4.0	.16	0		
17							29	2.8	.08	0		
18							28	2.8	.03	0		
19							25	5.5	.01	0		
20							37	1.3	.01	0		
21							38	1.8	.01	0		
22							37	1.8	.03	0		
23							29	2.0	.07	0		
24							25	1.5	.02	0		
25							28	1.2	0	0		
26							23	1.0	0	0		
27							21	1.0	0	0		
28							29	.94	0	0		
29							53	.90	0	0		
30							46	.82	0	0		
31							---	.67	---	0		---
TOTAL	0					0	558.0	320.83	5.10	2.44	0	0
MEAN	0					0	18.6	10.3	.17	.079	0	0
MAX	0					0	59	51	.61	.43	0	0
MIN	0					0	0	.67	0	0	0	0
AC-FT	0					0	1110	636	10	4.8	0	0

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

RED RIVER OF THE NORTH BASIN

05099300 PEMBINA RIVER NEAR WINDYGATES, MANITOBA
(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, 3 mi (5 km) northeast of Windygates.

DRAINAGE AREA.--3,020 mi² (7,820 km²).

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) above mean sea level. Datum of nonrecording gage is 1,105.00 ft (336.804 m) above mean sea level, both gages referred to Geodetic Survey of Canada datum.

AVERAGE DISCHARGE.--13 years, 258 ft³/s (7.307 m³/s) 186,900 acre-ft/yr (230 hm³/yr); median of yearly mean discharges, 200 ft³/s (5.66 m³/s) 145,000 acre-ft/yr (180 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,510 ft³/s (42.8 m³/s) May 14, gage height, 7.74 ft (2.359 m); maximum gage height 10.19 ft (3.106 m) Apr. 22, backwater from ice; minimum daily discharge, 2.4 ft³/s (0.068 m³/s) Feb. 5.

Period of record: Maximum discharge, 11,500 ft³/s (326 m³/s) Apr. 26, 1974, gage height, 19.50 ft (5.944 m); no flow in some years.

REMARKS.--Records fair.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	40	21	10	3.1	5.1	6.2	874	891	369	124	37
2	49	43	21	10	2.9	5.7	6.6	903	854	336	120	36
3	54	41	20	10	2.8	5.4	6.8	901	810	293	116	39
4	53	43	19	9.6	2.6	5.7	7.3	908	783	267	112	39
5	51	39	18	9.2	2.4	5.8	7.3	922	746	247	107	38
6	51	38	17	10	2.5	5.7	7.3	946	718	222	103	39
7	50	38	15	9.7	2.7	6.3	7.3	989	693	218	99	38
8	48	38	15	9.3	2.8	7.9	7.3	1060	669	206	95	37
9	47	37	14	9.0	2.9	9.5	7.4	1150	652	200	91	35
10	45	37	14	8.9	3.1	11	12	1230	638	193	87	34
11	44	36	13	6.7	3.2	9.9	82	1320	614	190	82	33
12	43	37	13	6.5	3.3	7.1	106	1410	615	187	78	33
13	43	39	12	6.4	3.4	7.0	144	1470	597	184	74	33
14	44	38	12	6.2	3.6	5.8	376	1490	590	181	71	33
15	43	36	12	6.1	3.7	5.5	296	1480	553	178	69	33
16	43	36	10	5.9	3.8	5.7	445	1480	527	175	64	33
17	42	43	11	5.7	4.0	6.8	353	1450	500	172	59	31
18	43	39	11	5.6	4.1	7.1	339	1400	475	169	62	33
19	43	41	11	5.4	4.2	6.7	324	1350	419	166	58	33
20	42	32	12	5.3	4.4	7.8	309	1330	415	163	53	32
21	42	28	12	5.1	4.5	8.1	295	1290	501	160	48	31
22	41	26	12	4.9	4.6	8.0	326	1240	429	157	46	36
23	40	23	11	4.7	4.7	7.9	357	1220	404	154	44	39
24	39	23	11	4.6	4.9	8.1	389	1200	384	151	47	40
25	38	22	11	4.4	5.0	7.4	450	1170	364	148	50	38
26	38	24	9.8	4.2	5.0	6.4	485	1160	331	145	47	37
27	39	23	9.6	4.0	5.0	6.5	499	1130	302	142	46	37
28	39	22	9.8	3.8	5.1	6.4	551	1060	272	139	46	34
29	40	21	10	3.7	---	5.3	716	1000	282	136	50	33
30	41	22	11	3.5	---	5.5	791	957	393	130	52	32
31	40	---	12	3.3	---	5.8	---	924	---	127	39	---
TOTAL	1367	1005	410.2	201.7	104.3	212.9	7708.5	36414	16421	5905	2239	1056
MEAN	44.1	33.5	13.2	6.51	3.73	6.87	257	1175	547	190	72.2	35.2
MAX	54	43	21	10	5.1	11	791	1490	891	369	124	40
MIN	38	21	9.6	3.3	2.4	5.1	6.2	874	272	127	39	31
AC-FT	2710	1990	814	400	207	422	15290	72230	32570	11710	4440	2090

CAL YR 1974 TOTAL 268611.8 MEAN 736 MAX 11200 MIN 6.0 AC-FT 532800
WTR YR 1975 TOTAL 73044.6 MEAN 200 MAX 1490 MIN 2.4 AC-FT 144900

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05099400 LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, N. DAK.

LOCATION.--Lat 48°51'55", long 98°00'20", in SW¼ sec.10, T.162 N., R.57 W., Cavalier County, 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 mi², (471 km²), of which 10 mi² (26 km²) is noncontributing.

PERIOD OF RECORD.--April 1956 to current year. Prior to October 1973, published as Little Pembina River near Walhalla.

GAGE.--Water-stage recorder. Datum of gage is 1,099.48 ft (335.122 m) above mean sea level. Prior to Sept. 10, 1956, nonrecording gage at bridge 25 ft (8 m) downstream at same datum.

AVERAGE DISCHARGE.--19 years, 22.7 ft³/s (0.643 m³/s), 16,450 acre-ft/yr (20.3 hm³/yr); median of yearly mean discharges, 19 ft³/s (0.54 m³/s), 13,800 acre-ft/yr (17 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 347 ft³/s (9.83 m³/s) Apr. 12, gage height, 7.80 ft (2.377 m); minimum daily, 0.10 ft³/s (0.003 m³/s) for many days.
Period of record: Maximum discharge, 6,600 ft³/s (187 m³/s) Apr. 25, 1970, gage height, 13.95 ft (4.252 m); no flow at times in some years.

REMARKS.--Records fair. Flow regulated since March 1971 by Mt. Carmel Reservoir 30 mi (48 km) upstream, capacity, 4,200 acre-ft (5.18 hm³). Records of chemical analyses and suspended sediment loads for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.62	2.2	.60	.10	.10	.10	.30	92	3.9	5.3	1.0	1.5
2	.49	2.6	.60	.10	.10	.10	.30	82	3.7	5.0	.88	1.1
3	.62	2.4	.60	.10	.10	.10	.30	72	3.7	5.0	.75	.75
4	.62	2.2	.60	.10	.10	.10	.30	59	3.7	4.8	.62	.62
5	.75	2.2	.60	.10	.10	.10	.30	46	3.7	5.0	.62	.49
6	1.1	2.2	.60	.10	.10	.10	.30	34	3.7	4.1	.49	.36
7	1.4	2.2	.60	.10	.10	.10	.30	25	3.6	3.3	.36	.36
8	1.5	2.0	.55	.10	.10	.10	.30	19	3.5	2.4	.75	.36
9	1.5	2.0	.55	.10	.10	.10	.30	15	3.4	2.0	.62	.23
10	2.2	1.9	.55	.10	.10	.10	.40	13	3.7	1.8	.62	.10
11	2.3	1.9	.55	.10	.10	.10	5.0	12	3.6	1.5	.62	.10
12	2.0	1.9	.55	.10	.10	.10	220	10	3.5	1.4	.49	.10
13	1.9	1.5	.50	.10	.10	.10	170	8.7	3.4	1.4	.36	.10
14	1.9	1.4	.50	.10	.10	.10	175	10	3.2	1.3	.62	.10
15	1.8	1.1	.50	.10	.10	.10	113	10	3.1	1.0	.49	.10
16	1.8	1.1	.50	.10	.10	.50	95	8.0	3.0	1.7	.36	.10
17	1.7	1.1	.50	.10	.10	1.0	81	7.7	2.8	1.5	.36	.10
18	1.5	1.3	.50	.10	.10	.90	56	6.2	2.7	1.4	.36	.62
19	1.4	1.1	.40	.10	.10	.50	34	5.9	2.6	1.3	.36	.75
20	1.3	1.1	.40	.10	.10	.50	36	5.4	2.6	1.1	.36	.88
21	1.5	1.0	.30	.10	.10	.50	68	5.1	2.8	.88	.49	.62
22	1.5	.90	.30	.10	.10	.50	66	5.3	4.0	.75	.49	.62
23	1.1	.85	.30	.10	.10	.50	62	5.9	3.7	.75	.49	.62
24	1.3	.80	.30	.10	.10	.50	48	5.4	3.5	.62	.49	.49
25	1.5	.80	.30	.10	.10	.50	39	5.0	3.1	.62	.49	.23
26	1.7	.80	.20	.10	.10	.50	31	4.7	3.0	.49	.49	.10
27	1.8	.80	.20	.10	.10	.50	25	4.7	3.2	.49	.49	.36
28	1.9	.70	.20	.10	.10	.45	74	4.6	3.2	.36	.49	.49
29	2.0	.70	.10	.10	---	.40	161	4.4	3.5	.36	.88	.62
30	2.0	.60	.10	.10	---	.35	102	4.3	5.4	.36	1.3	.49
31	2.2	---	.10	.10	---	.30	---	4.0	---	.36	1.4	---
TOTAL	46.90	43.35	13.15	3.10	2.80	9.90	1664.10	594.3	102.5	58.34	18.59	13.46
MEAN	1.51	1.45	.42	.10	.10	.32	55.5	19.2	3.42	1.88	.60	.45
MAX	2.3	2.6	.60	.10	.10	1.0	220	92	5.4	5.3	1.4	1.5
MIN	.49	.60	.10	.10	.10	.10	.30	4.0	2.6	.36	.36	.10
AC-FT	93	86	26	6.1	5.6	20	3300	1180	203	116	37	27

CAL YR 1974 TOTAL 23076.17 MEAN 63.2 MAX 2140 MIN .10 AC-FT 45770
WTR YR 1975 TOTAL 2570.49 MEAN 7.04 MAX 220 MIN .10 AC-FT 5100

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

RED RIVER OF THE NORTH BASIN

05099600 PEMBINA RIVER AT WALHALLA, N. DAK.

LOCATION.--Lat 48°54'50", long 97°55'00", in NE¼NE¼ sec.29, T.163 N., R.56 W., Pembina County, 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 mi² (8,680 km²), approximately.

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1963, published as "near Walhalla."

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.

AVERAGE DISCHARGE.--36 years, 243 ft³/s (6.882 m³/s) 176,100 acre-ft/yr (217 hm³/yr); median of yearly mean discharges, 190 ft³/s (5.38 m³/s) 138,000 acre-ft/yr (170 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,470 ft³/s (41.6 m³/s) May 17, gage height, 6.64 ft (2.024 m); maximum gage height 7.50 ft (2.286 m) Apr. 12, backwater from ice; minimum daily discharge 4.6 ft³/s (0.13 m³/s) Mar. 12-14.

Period of record: Maximum discharge, 20,400 ft³/s (578 m³/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 ft³/s (198 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times in some years.

REMARKS.--Records good except those for the winter period which are fair. Records of chemical analyses, water temperatures, and suspended sediment loads for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1388: 1943, 1950(P). WSP 1558: 1957. WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	41	27	15	7.3	5.0	9.5	1020	890	436	160	56
2	63	41	27	14	7.0	5.0	9.5	1010	863	400	157	52
3	57	40	26	14	6.7	5.0	9.5	989	840	385	154	51
4	58	38	24	13	6.4	5.0	10	980	768	379	148	51
5	58	39	23	12	6.0	5.0	11	958	755	330	142	51
6	60	38	22	11	5.5	5.0	13	962	715	305	136	51
7	62	38	22	11	5.5	5.0	15	984	695	282	130	51
8	60	38	21	11	5.5	4.9	17	1020	683	265	126	50
9	59	38	21	11	5.5	4.9	19	1060	661	257	115	47
10	59	38	20	10	5.5	4.8	25	1150	668	246	102	46
11	59	37	19	10	5.3	4.7	40	1280	650	237	97	44
12	59	32	18	10	5.2	4.6	345	1350	630	232	95	44
13	57	28	18	9.5	5.2	4.6	340	1410	602	232	92	43
14	57	26	18	9.5	5.2	4.6	335	1440	580	230	90	41
15	57	26	17	9.0	5.2	5.0	403	1440	563	226	86	40
16	56	27	17	9.0	5.1	7.0	584	1440	532	222	80	39
17	56	35	16	8.9	5.1	9.1	622	1440	518	216	75	39
18	54	37	16	8.8	5.1	9.5	535	1390	493	212	72	40
19	54	38	16	8.7	5.1	10	507	1350	490	208	70	40
20	53	37	16	8.6	5.0	10	418	1300	462	202	69	41
21	52	36	15	8.5	5.0	9.9	504	1290	507	200	68	40
22	52	35	15	8.4	5.0	9.9	539	1250	563	190	67	39
23	50	34	15	8.4	5.0	9.8	560	1220	490	194	62	39
24	50	33	15	8.3	5.0	9.8	566	1210	449	188	59	43
25	49	32	15	8.2	5.0	9.8	542	1140	424	183	57	43
26	44	31	15	8.1	5.0	9.7	560	1150	406	182	56	42
27	42	30	15	8.0	5.0	9.7	580	1100	356	175	55	41
28	42	29	15	7.9	5.0	9.7	723	1080	358	169	53	41
29	42	29	15	7.8	---	9.6	926	1020	430	168	51	39
30	42	28	16	7.6	---	9.6	953	966	521	163	55	39
31	41	---	16	7.5	---	9.5	---	935	---	160	56	---
TOTAL	1668	1029	571	302.7	152.4	225.7	10720.5	36334	17562	7474	2835	1323
MEAN	53.8	34.3	18.4	9.76	5.44	7.28	357	1172	585	241	91.5	44.1
MAX	64	41	27	15	7.3	10	953	1440	890	436	160	56
MIN	41	26	15	7.5	5.0	4.6	9.5	935	356	160	51	39
AC-FT	3310	2040	1130	600	302	448	21260	72070	34830	14820	5620	2620
CAL YR 1974	TOTAL	338301.0	MEAN	927	MAX	13300	MIN	10	AC-FT	671000		
WTR YR 1975	TOTAL	80197.3	MEAN	220	MAX	1440	MIN	4.6	AC-FT	159100		

PEAK DISCHARGE (BASE, 400 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-12	--	--	800	5-17	0600	6.64	1,470
4-17	0600	5.05	695	†	Unknown	--	About 600

† Probably occurred June 30.

05100000 PEMBINA RIVER AT NECHE, N. DAK.
(International gaging station)

LOCATION.--Lat 48°59'20", long 97°33'05", in SE¼NW¼ sec.31, T.164 N., R.53 W., Pembina County, on right bank 0.3 mi (0.5 km) east of State Highway 18, at north edge of Neche.

DRAINAGE AREA.--3,410 mi² (8,830 km²), 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.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 809.69 ft (246.794 m) above mean sea level. 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.

AVERAGE DISCHARGE.--67 years (1903-8, 1909-15, 1919-75), 191 ft³/s (5.409 m³/s), 138,400 acre-ft/yr (171 hm³/yr); median of yearly mean discharges, 140 ft³/s (3.96 m³/s), 101,400 acre-ft/yr (125 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,500 ft³/s (42.5 m³/s) May 18, gage height, 11.03 ft (3.362 m); minimum daily, 5.4 ft³/s (0.15 m³/s) Mar. 14-16.

Period of record: Maximum discharge, 10,700 ft³/s (303 m³/s) Apr. 20, 1950, gage height, 21.58 ft (6.578 m), backwater from ice; from rating curve extended above 5,300 ft³/s (150 m³/s); maximum gage height, 22.92 ft (6.986 m) Apr. 28, 1974; no flow at times each year 1932-41, 1953, 1960-62.

REMARKS.--Records fair. Records of chemical analyses for the 1975 water year are published in Section 2 of this report.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

REVISIONS (WATER YEARS).--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.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	41	32	18	9.2	6.0	13	942	1010	475	166	62
2	80	41	30	17	9.2	6.0	13	947	974	527	164	62
3	80	41	28	17	9.0	6.0	13	984	956	504	163	60
4	77	41	28	16	9.0	6.0	13	993	910	423	161	58
5	77	41	27	15	9.0	6.0	13	988	835	376	159	58
6	77	41	26	15	9.0	5.9	13	979	829	347	150	57
7	77	41	25	14	9.0	5.9	13	974	794	314	140	57
8	77	41	24	13	8.6	5.9	13	984	771	298	135	56
9	80	41	23	13	8.3	5.9	13	1020	748	291	130	55
10	80	41	22	13	8.0	5.8	14	1140	742	259	120	55
11	77	41	21	12	7.9	5.8	16	1210	736	243	115	55
12	77	41	21	12	7.8	5.7	20	1270	724	232	100	50
13	74	32	21	12	7.2	5.6	26	1350	695	232	86	48
14	74	28	21	11	7.0	5.4	121	1440	666	231	86	46
15	71	28	21	11	6.8	5.4	597	1470	643	230	86	44
16	68	32	21	11	6.6	5.4	626	1490	626	230	83	43
17	65	38	21	11	6.3	5.6	643	1490	608	229	83	44
18	65	43	19	10	6.2	6.0	655	1490	585	223	83	44
19	65	46	19	10	6.1	6.0	666	1470	556	221	83	45
20	59	46	19	10	6.0	6.0	591	1450	539	218	83	46
21	56	46	19	10	6.0	6.5	585	1400	527	212	80	46
22	53	43	19	10	6.0	7.0	620	1360	539	206	80	45
23	53	43	18	10	6.0	9.7	661	1330	585	200	77	46
24	51	43	18	9.9	6.0	10	649	1300	556	196	73	47
25	51	34	18	9.8	6.0	12	614	1280	527	192	70	48
26	48	34	18	9.8	6.0	13	608	1250	492	190	66	47
27	48	34	18	9.7	6.0	13	608	1240	475	188	63	46
28	43	34	18	9.6	6.0	13	643	1230	452	184	61	45
29	43	34	18	9.5	---	13	800	1190	423	178	59	44
30	43	34	19	9.4	---	13	974	1150	417	170	59	43
31	41	---	19	9.3	---	28	---	1050	---	168	61	---
TOTAL	2010	1164	671	368.0	204.2	254.5	10854	37861	19940	8187	3125	1502
MEAN	64.8	38.8	21.6	11.9	7.29	8.21	362	1221	665	264	101	50.1
MAX	80	46	32	18	9.2	28	974	1490	1010	527	166	62
MIN	41	28	18	9.3	6.0	5.4	13	942	417	168	59	43
AC-FT	3990	2310	1330	730	405	505	21530	75100	39550	16240	6200	2980
CAL YR 1974 TOTAL	316028.6		MEAN 866	MAX 9950	MIN 6.0	AC-FT 626800						
WTR YR 1975 TOTAL	86140.7		MEAN 236	MAX 1490	MIN 5.4	AC-FT 170900						

PEAK DISCHARGE (BASE, 400 FT³/S).--May 18 (0300) 1,500 FT³/S (11.03 FT).

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

RED RIVER OF THE NORTH BASIN

05100500 HERZOG CREEK NEAR CONCRETE, N. DAK.

LOCATION.--Lat 48°45'13", long 97°54'22", in SE¼ sec.20, T.161 N., R.56 W., Pembina County, on left bank 1.7 mi (2.7 km) northeast of Concrete and 1.7 mi (2.7 km) upstream from mouth.

DRAINAGE AREA.--18.9 mi² (49 km²).

PERIOD OF RECORD.--June 1954 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,108.95 ft (338.008 m) above mean sea level (levels by Soil Conservation Service). Prior to Sept. 15, 1971, recording gage at site 0.5 mi (0.8 km) downstream at same datum.

AVERAGE DISCHARGE.--21 years, 3.29 ft³/s (0.0932 m³/s) 2,380 acre-ft/yr (2.93 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 53 ft³/s (1.50 m³/s) Apr. 29, gage height 10.27 ft (3.130 m); maximum gage height observed, 10.35 ft (3.155 m) Oct. 9, backwater from beaver dam; no flow many days.
Period of record: Maximum discharge, 260 ft³/s (7.36 m³/s) Apr. 2, 1955, gage height, 9.74 ft (2.969 m), from floodmarks, backwater from ice; no flow at times each year.

REMARKS.--Records fair. Flood flow affected by temporary retention in four retarding basins above station. The farthest downstream retarding basin, located 0.8 mi (1.3 km) above station, is used to regulate summer flow. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.20	.08			0	0	36	.08	4.5	.05	.02
2	.01	.20	.08			0	0	22	.08	4.5	.05	.01
3	.01	.20	.08			0	0	15	.08	4.0	.10	.01
4	.01	.20	.03			0	0	12	.08	3.5	.05	.01
5	8.0	.15	.03			0	0	9.3	.03	3.0	.05	.01
6	25	.15	.03			0	0	8.5	.08	2.5	.05	.01
7	25	.10	.03			0	0	7.3	.08	1.0	.05	.01
8	25	.10	.03			0	0	5.8	.08	.75	.05	.01
9	27	.10	.03			0	0	4.4	.08	.50	.05	.01
10	27	.10	.02			0	0	3.0	.08	.10	.03	0
11	25	.10	.02			0	0	.85	.20	.08	.03	0
12	23	.10	.02			0	0	.20	.35	.05	.03	0
13	20	.10	.01			0	0	.35	.85	.03	.02	0
14	14	.10	.01			0	0	1.4	1.4	.03	.02	0
15	9.3	.10	.01			0	.05	1.4	1.4	.03	.02	0
16	7.3	.30	.01			0	.50	1.1	1.4	.03	.02	0
17	5.8	.40	.01			0	.50	1.1	1.4	.10	.02	0
18	4.4	.50	.01			.05	.50	1.1	1.4	.03	.02	0
19	3.3	.55	.01			.01	.50	1.1	1.4	.03	.02	0
20	2.6	.82	.01			0	.50	.85	2.0	.03	.02	0
21	1.7	.55	0			0	.60	.55	2.3	.03	.02	0
22	1.4	.55	0			0	2.0	.35	4.7	.03	.02	0
23	1.1	.35	0			0	20	.20	7.3	.05	.02	0
24	.85	.35	0			0	15	.35	7.0	.05	.02	0
25	.35	.35	0			0	10	.35	6.0	.03	.02	0
26	.35	.35	0			0	8.1	.35	5.0	.03	.02	0
27	.35	.35	0			0	8.5	.20	4.0	.03	.02	0
28	.35	.35	0			0	25	.20	4.0	.03	.02	0
29	.55	.35	0		---	0	51	.20	4.5	.02	.02	0
30	.35	.08	0		---	0	49	.08	5.0	.02	.02	0
31	.35	---	0		---	0	---	.08	---	.02	.02	---
TOTAL	259.44	8.20	.56	0	0	.06	191.75	135.66	62.35	25.13	1.42	.10
MEAN	8.37	.27	.018	0	0	.002	6.39	4.38	2.08	.81	.046	.003
MAX	27	.82	.08	0	0	.05	51	36	7.3	4.5	.50	.02
MIN	.01	.08	0	0	0	0	0	.08	.03	.02	.02	0
AC-FT	515	16	1.1	0	0	.1	380	269	124	50	2.8	.2
CAL YR 1974 TOTAL	2631.08		MEAN 7.21	MAX 115	MIN 0	AC-FT 5220						
WTR YR 1975 TOTAL	684.67		MEAN 1.88	MAX 51	MIN 0	AC-FT 1360						

05101000 TONGUE RIVER AT AKRA, N. DAK.

LOCATION.--Lat 48°46'42", long 97°44'43", in SW¼ sec.10, T.161 N., R.55 W., Pembina County, 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. Prior to Dec. 19, 1973, at site 2.7 mi (4.3 km) downstream.

DRAINAGE AREA.--160 mi² (414 km²).

PERIOD OF RECORD.--April to June 1950 (WSP 1137-B), October 1951 to current year.

GAGE.--Water-stage recorder. Datum of gage is 930.00 ft (283.464 m) above mean sea level. 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.

AVERAGE DISCHARGE.--24 years (1951-75) 22.0 ft³/s (0.623 m³/s), 15,940 acre-ft/yr (19.7 hm³/yr); median of yearly mean discharges, 20 ft³/s (0.57 m³/s) 14,500 acre-ft/yr (18 hm³/yr).

EXTREMES.--Current year: Maximum daily discharge, 76 ft³/s (2.15 m³/s) Apr. 25, gage height, 10.38 ft (3.164 m); minimum daily discharge, 0.16 ft³/s (0.005 m³/s) Oct. 1, 2.
Period of record: Maximum discharge, 11,800 ft³/s (334 m³/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 ft³/s (42.5 m³/s) on basis of contracted-opening measurement of peak flow; no flow Dec. 1-27, 1952, Aug. 13, 14, 1961.
Flood of Apr. 18, 1950, is the highest known since settlement of the region (about 1860).

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 period 1955 to 1961 and have a combined capacity of 19,245 acre-ft (23.7 hm³). Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	3.4	7.6	6.0	4.8	4.0	3.6	70	3.4	2.6	3.3	3.2
2	.16	3.4	7.5	6.0	4.7	4.0	3.6	68	3.4	2.6	3.5	3.2
3	.19	3.4	7.3	6.0	4.7	4.0	3.6	62	3.4	2.6	3.4	3.2
4	.25	3.4	7.3	6.0	4.7	3.8	1.5	58	3.4	2.6	3.4	3.2
5	.22	3.4	7.3	6.0	4.7	3.8	.25	55	3.4	2.6	3.4	3.2
6	.28	3.4	7.3	5.7	4.7	3.8	.22	50	3.4	2.4	3.4	3.2
7	.31	3.4	7.1	5.7	4.7	3.8	.22	45	3.4	2.4	3.4	3.2
8	5.3	3.4	6.9	5.7	4.6	3.6	.22	40	3.4	2.4	3.4	3.2
9	10	3.4	6.9	5.7	4.6	3.6	.22	35	3.4	2.4	3.4	3.2
10	10	3.4	6.9	5.7	4.6	3.6	.22	28	3.4	2.4	3.4	3.1
11	10	8.2	6.9	5.7	4.6	3.6	.22	25	3.4	2.4	3.4	3.1
12	10	16	6.9	5.2	4.6	3.6	.22	22	3.4	2.4	3.4	3.0
13	10	16	6.9	5.2	4.6	3.6	.22	20	3.2	2.5	3.3	3.0
14	10	16	6.9	5.2	4.6	3.6	.22	20	3.2	2.5	3.3	3.0
15	7.2	16	6.9	5.2	4.5	3.6	.22	20	3.2	2.5	3.3	2.8
16	3.4	15	6.9	5.2	4.4	3.6	10	20	3.2	2.7	3.3	2.8
17	3.3	15	6.7	5.2	4.4	3.6	40	20	3.0	2.9	3.3	2.8
18	3.3	16	6.7	5.2	4.4	3.6	45	20	3.0	3.2	3.3	2.6
19	3.3	16	6.5	5.2	4.4	3.6	50	20	3.0	3.6	3.3	2.4
20	3.3	14	6.5	5.2	4.4	3.7	55	20	3.0	3.7	3.3	2.4
21	3.3	13	6.3	5.2	4.4	3.7	60	20	3.0	3.8	3.3	2.4
22	3.3	12	6.3	5.2	4.4	3.7	67	20	3.2	3.8	3.3	2.2
23	3.3	11	6.3	5.2	4.4	3.6	74	20	3.2	3.8	3.3	2.2
24	3.3	10	6.3	5.2	4.4	3.6	74	20	3.0	3.8	3.3	2.2
25	3.3	9.3	6.3	5.2	4.4	3.6	76	20	3.0	3.8	3.3	2.0
26	3.3	9.1	6.3	5.2	4.4	3.6	75	20	2.8	3.7	3.3	2.0
27	3.3	8.6	6.3	5.0	4.4	3.6	75	5.0	2.8	3.6	3.3	2.0
28	3.3	8.4	6.3	5.0	4.2	3.6	75	3.4	2.8	3.5	3.3	1.8
29	3.3	8.0	6.3	4.8	---	3.6	73	3.4	2.8	3.5	3.3	1.8
30	3.4	7.8	6.3	4.8	---	3.6	72	3.4	2.8	3.4	3.3	1.8
31	3.4	---	6.3	4.8	---	3.6	---	3.4	---	3.4	3.3	---
TOTAL	127.17	279.4	209.2	166.6	126.7	113.9	935.75	856.6	95.0	93.5	103.5	80.2
MEAN	4.10	9.31	6.75	5.37	4.53	3.67	31.2	27.6	3.17	3.02	3.34	2.67
MAX	10	16	7.6	6.0	4.8	4.0	76	70	3.4	3.8	3.5	3.2
MIN	.16	3.4	6.3	4.8	4.2	3.6	.22	3.4	2.8	2.4	3.3	1.8
AC-FT	252	554	415	330	251	226	1860	1700	188	185	205	159
CAL YR 1974	TOTAL	16519.99	MEAN	45.3	MAX	586	MIN	.09	AC-FT	32770		
WTR YR 1975	TOTAL	3187.52	MEAN	8.73	MAX	76	MIN	.16	AC-FT	6320		

RED RIVER OF THE NORTH BASIN

05102500 RED RIVER OF THE NORTH AT EMERSON, MANITOBA
(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 (kilometre 248.3).

DRAINAGE AREA.--40,200 mi² (104,100 km²), approximately, includes 3,800 mi² (9,840 km²) in closed basins.

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) above mean sea level, datum of 1929, by Geodetic Survey of Canada. See WSP 1728 or 1913 for history of changes prior to Apr. 10, 1953.

AVERAGE DISCHARGE.--63 years (1912-75) 3,259 ft³/s (92.29 m³/s), 2,361,000 acre-ft/yr (2.91 km³/yr); median of yearly mean discharges, 2,630 ft³/s (74 m³/s), 1,910,000 acre-ft/yr (2.4 km³/yr).

EXTREMES.--Current year: Maximum discharge, 42,800 ft³/s (1,210 m³/s) May 8; gage height, 84.32 ft (25.701 m); minimum daily discharge, 981 ft³/s (27.8 m³/s) Jan. 21.
Period of record: Maximum discharge, 95,500 ft³/s (2,700 m³/s) May 13, 1950, gage height, 90.89 ft (27.703 m); minimum observed, 0.9 ft³/s (0.025 m³/s) Feb. 6-8, 1937, gage height, 44.00 ft (13.411 m).

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.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1570	2050	1410	1360	1330	1470	2100	37300	7770	15600	17700	2990
2	1580	2070	1410	1380	1320	1480	2070	38600	7460	17300	14100	2860
3	1570	2140	1400	1390	1310	1480	2050	39800	7150	19000	11300	2720
4	1540	2280	1400	1400	1320	1470	2040	40900	6820	20300	8700	2510
5	1540	2450	1400	1410	1340	1450	2040	41800	6600	22000	7000	2330
6	1570	2610	1410	1420	1360	1440	2020	42400	6390	23600	5250	2310
7	1620	2750	1420	1420	1370	1460	1990	42700	6150	24700	4810	2370
8	1690	2840	1450	1440	1380	1470	1960	42700	5890	25600	4490	2460
9	1760	2820	1520	1440	1390	1460	1930	42400	5790	26600	4190	2550
10	1800	2820	1540	1440	1390	1460	1920	41400	5760	27200	3950	2640
11	1830	2820	1540	1460	1400	1460	1910	40100	5530	27700	3760	2700
12	1900	2810	1510	1470	1400	1460	2010	38900	5420	28100	3600	2730
13	1990	2810	1410	1470	1410	1470	2320	37000	5360	28800	3460	2750
14	2020	2730	1290	1460	1410	1480	3060	34500	5320	29400	3340	2750
15	2050	2700	1200	1460	1410	1480	4540	32300	5200	30200	3240	2730
16	2060	2580	1190	1420	1430	1490	6800	30100	5050	31100	3160	2690
17	2060	2450	1210	1350	1440	1500	9480	27900	4930	32000	3080	2660
18	2080	2230	1220	1250	1440	1520	12000	25300	4840	33000	3030	2660
19	2100	1850	1220	1110	1460	1550	14200	22500	4740	33800	2990	2600
20	2130	1700	1220	1000	1460	1580	16500	20300	4640	34500	2950	2530
21	2160	1610	1230	981	1460	1590	19100	18000	4610	35000	2920	2490
22	2180	1540	1250	1030	1460	1610	24200	16000	4730	35500	2910	2470
23	2200	1500	1330	1090	1470	1650	28700	14100	5350	35700	2890	2450
24	2200	1470	1370	1120	1470	1720	29000	12800	6120	35500	2900	2460
25	2190	1460	1380	1170	1470	1850	29300	11600	8070	34700	2890	2440
26	2170	1450	1390	1220	1470	2000	29900	10600	10100	33500	2900	2410
27	2140	1440	1380	1270	1480	2160	31100	9850	11400	31400	2910	2400
28	2110	1420	1380	1300	1480	2260	32900	9320	12400	28900	2910	2390
29	2090	1420	1370	1320	---	2280	35200	8870	13400	26000	2930	2380
30	2080	1420	1330	1340	---	2250	36200	8480	14700	22600	2930	2360
31	2070	---	1330	1330	---	2170	---	8110	---	19400	2920	---
TOTAL	60050	64240	42110	40721	39530	51170	388540	846630	207690	868700	146110	76790
MEAN	1937	2141	1358	1314	1412	1651	12950	27310	6923	28020	4713	2560
MAX	2200	2840	1540	1470	1480	2280	36200	42700	14700	35700	17700	2990
MIN	1540	1420	1190	981	1310	1440	1910	8110	4610	15600	2890	2310
AC-FT	119100	127400	83530	80770	78410	101500	770700	1679000	412000	1723000	289800	152300
CAL YR 1974 TOTAL	2430710			6659			1190	AC-FT	4821000			
WTR YR 1975 TOTAL	2832281			7760			981	AC-FT	5618000			

M - Expressed in thousands

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

RED RIVER OF THE NORTH BASIN

91

05113360 LONG CREEK AT WESTERN CROSSING OF INTERNATIONAL BOUNDARY
(International gaging station)

LOCATION.--Lat 49°00'01", long 103°21'08", in SE¼ sec.1, T.1, R.11 W., 2d meridian of right bank 10 mi (16 km) south of Outram, Saskatchewan.

DRAINAGE AREA.--1,320 mi² (3,420 km²).

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) above mean sea level, international boundary survey.

AVERAGE DISCHARGE.--16 years, 34.4 ft³/s (0.974 m³/s) 24,920 acre-ft/yr (30.7 hm³/yr); median of yearly mean discharges, 28 ft³/s (0.79 m³/s) 20,300 acre-ft/yr (25 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,400 ft³/s (68.0 m³/s) Apr. 26, gage height, 9.00 ft (2.743 m); no flow for several months.

Period of record: Maximum discharge, 3,970 ft³/s (112 m³/s) Apr. 10, 1969, gage height, 12.17 ft (3.709 m), backwater from ice; no flow for several months each year.

REMARKS.--Records good. 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.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	.73	1270	20	4.1	0	0
2						0	1.3	1040	17	3.8	0	.16
3						0	.37	950	15	3.4	0	.83
4						0	.04	849	13	3.0	0	1.4
5						0	.02	673	12	3.0	0	1.3
6						0	.01	496	10	2.7	0	1.2
7						0	.01	391	9.9	2.2	0	.85
8						0	.04	409	17	1.7	0	1.2
9						0	0	413	50	1.3	0	.82
10						0	0	329	174	1.1	0	.69
11						0	0	253	146	.87	0	.51
12						0	.33	189	107	.63	0	.37
13						0	.38	161	75	.48	0	.39
14						0	.31	145	43	.39	0	.44
15						0	7.3	127	31	.30	0	.10
16						0	.38	112	22	.26	0	.06
17						.01	.89	100	19	.53	0	.05
18						.14	.90	90	16	.38	0	.10
19						1.0	.358	80	13	.28	0	.55
20						.42	.832	68	12	.19	0	5.5
21						.55	1130	56	11	.09	0	7.3
22						3.2	1400	48	9.4	.08	0	6.1
23						4.4	.987	44	7.8	.06	0	2.7
24						2.0	1580	41	5.7	.03	0	1.7
25						1.5	2130	38	6.2	.02	0	1.0
26						.76	2340	34	5.6	0	0	.81
27						.42	2010	33	5.1	0	0	.58
28						.36	1810	32	4.6	0	0	.48
29					---	.09	2150	28	4.2	0	0	.52
30					---	.09	1660	25	3.9	0	.02	.49
31		---			---	.27	---	22	---	0	.02	---
TOTAL	0	0	0	0	0	15.21	18683.15	8546	885.4	30.89	.04	38.20
MEAN	0	0	0	0	0	.49	623	276	29.5	1.00	.001	1.27
MAX	0	0	0	0	0	4.4	2340	1270	174	4.1	.02	7.3
MIN	0	0	0	0	0	0	0	22	3.9	0	0	0
AC-FT	0	0	0	0	0	30	37060	16950	1760	61	.08	76

CAL YR 1974 TOTAL 25254.58 MEAN 69.2 MAX 1630 MIN 0 AC-FT 50090
WTR YR 1975 TOTAL 28198.89 MEAN 77.3 MAX 2340 MIN 0 AC-FT 55930

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

RED RIVER OF THE NORTH BASIN

05113600 LONG CREEK NEAR NOONAN, N. DAK.
(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, 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 mi² (4,640 km²), approximately, of which about 1,160 mi² (3,000 km²) is probably non-contributing.

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

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.

AVERAGE DISCHARGE.--16 years, 43.9 ft³/s (1.243 m³/s), 31,810 acre-ft/yr (39.2 hm³/yr); median of yearly mean discharges, 34 ft³/s (0.96 m³/s), 24,600 acre-ft/yr (30 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,660 ft³/s (75.3 m³/s) Apr. 29, gage height, 13.11 ft (3.996 m); minimum daily, 0.02 ft³/s (0.001 m³/s) July 30, 31.
Period of record: Maximum discharge, 4,980 ft³/s (141 m³/s) Apr. 10, 1969, gage height, 16.23 ft (4.947 m); no flow at times most years.

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.

REVISIONS.--WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.64	1.0	.64	.75	.54	.70	1.3	1620	38	15	.07	.88
2	.64	1.0	.64	.75	.54	.60	1.3	1340	35	16	.07	2.7
3	.76	1.0	.64	.75	.54	.56	1.1	1120	31	13	.70	6.9
4	.76	1.0	.60	.75	.54	.49	1.1	986	30	13	.85	4.2
5	.76	1.1	.65	.75	.54	.53	1.3	799	27	14	.44	3.2
6	.76	1.1	.65	.75	.54	.57	1.4	579	25	14	.34	2.5
7	.76	1.1	.65	.76	.54	.49	1.4	429	24	13	.34	2.5
8	.76	1.1	.60	.76	.54	.41	1.4	401	24	11	1.0	2.7
9	.76	1.4	.60	.76	.54	.57	1.3	425	47	9.7	1.0	2.7
10	.88	1.8	.55	.76	.54	.65	1.0	368	98	8.5	1.4	3.0
11	.76	1.3	.50	.76	.44	.57	1.1	291	170	7.0	2.1	3.0
12	.88	.88	.50	.76	.44	.70	1.3	238	129	5.7	1.8	2.7
13	.88	.88	.50	.88	.44	.85	2.3	185	99	5.3	1.4	3.0
14	1.0	.88	.55	1.0	.44	1.2	10	170	73	4.7	1.0	3.0
15	1.0	.88	.60	1.0	.44	1.6	35	151	55	4.0	.76	3.0
16	1.0	.64	.60	.88	.44	1.9	50	136	44	3.5	.54	3.4
17	.88	.64	.60	.88	.44	1.5	200	123	38	5.9	.64	3.7
18	1.0	.64	.65	.88	.44	1.2	240	109	34	6.2	.54	10
19	1.0	.64	.65	.88	.44	1.4	270	101	30	4.9	.88	29
20	.88	.64	.65	.88	.44	1.7	700	92	28	3.5	.88	28
21	.88	.64	.65	.88	.44	1.2	1370	83	25	2.9	1.0	32
22	.76	.64	.65	.88	.44	.84	1550	73	23	2.7	1.4	37
23	.88	.64	.65	.88	.44	.59	1400	67	21	2.5	2.1	34
24	1.0	.64	.70	.88	.49	.42	1450	63	19	2.0	2.3	31
25	1.0	.64	.70	.88	.64	.71	2040	64	17	1.7	3.2	28
26	.88	.64	.70	.88	.62	1.1	2320	57	16	1.1	2.5	25
27	.88	.64	.75	.88	.60	1.3	2320	53	15	.76	1.1	22
28	.88	.64	.75	.76	.64	1.3	2170	51	14	.51	.64	19
29	.88	.64	.75	.64	---	1.3	2530	48	12	.17	1.0	16
30	1.0	.64	.75	.64	---	1.3	2400	44	11	.02	1.6	13
31	1.0	---	.75	.64	---	1.3	---	41	---	.02	1.3	---
TOTAL	26.80	26.02	19.82	25.18	14.11	29.55	21072.3	10307	1252	192.28	34.89	377.08
MEAN	.86	.87	.64	.81	.50	.95	702	332	41.7	6.20	1.13	12.6
MAX	1.0	1.8	.75	1.0	.64	1.9	2530	1620	170	16	3.2	37
MIN	.64	.64	.50	.64	.44	.41	1.0	41	11	.02	.07	.88
AC-FT	53	52	39	50	28	59	41800	20440	2480	381	69	748
CAL YR 1974	TOTAL	37894.48	MEAN	104	MAX	1920	MIN	0	AC-FT	75160		
WTR YR 1975	TOTAL	33377.03	MEAN	91.4	MAX	2530	MIN	.02	AC-FT	66200		

PEAK DISCHARGE (BASE, 200 FT³/S).--Apr. 29 (1930) 2,660 FT³/S (13.11 FT).

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05113750 EAST BRANCH SHORT CREEK RESERVOIR NEAR COLUMBUS, N. DAK.

LOCATION.--Lat 48°59'26", long 102°47'07", in SW¼NW¼ sec.32, T.164 N., R.93 W., Burke County, 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 mi² (725 km²), of which 175 mi² (453 km²) 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) above mean sea level.

EXTREMES.--Current year: Maximum contents, 1,650 acre-ft (2.03 hm³) Apr. 29, elevation, 30.67 ft (9.348 m); minimum, 1,110 acre-ft (1.37 hm³) Feb. 12, elevation 26.20 ft (7.986 m).

Period of record: Maximum contents, 1,705 acre-ft (2.10 hm³) Apr. 6, 1969, elevation, 31.11 ft (9.482 m); minimum, 1,002 acre-ft (1.24 hm³) Dec. 10-13, 1967.

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) above mean sea level. Reservoir capacity at crest elevation, 1,200 acre-ft (1.48 hm³). The reservoir is operated for water supply and recreation.

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30-----	26.62	1,160	--
Oct. 31-----	26.42	1,140	-20
Nov. 30-----	26.30	1,120	-20
Dec. 31-----	26.31	1,120	0
CAL YR 1974-----	--	--	+20
Jan. 31-----	26.25	1,120	0
Feb. 28-----	26.25	1,120	0
Mar. 31-----	26.58	1,150	+30
Apr. 30-----	30.53	1,630	+480
May 31-----	28.16	1,340	-290
June 30-----	28.60	1,390	+50
July 31-----	27.57	1,270	-120
Aug. 31-----	27.35	1,240	-30
Sept. 30-----	28.10	1,330	+90
WTR YR 1975-----	--	--	+170

RED RIVER OF THE NORTH BASIN

05113800 SHORT CREEK BELOW INTERNATIONAL BOUNDARY NEAR ROCHE PERCEE, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°01'42", long 102°51'00", in SW¼ sec.14, T.1, R.7 W., 2d meridian, 4 mi (6 km) southwest of Roche Percee and 5 mi (8 km) upstream from mouth.

DRAINAGE AREA.--480 mi² (1,240 km²).

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

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--15 years, 12.2 ft³/s (0.346 m³/s) 8,840 acre-ft/yr (10.9 hm³/yr); median of yearly mean discharges, 4.8 ft³/s (0.14 hm³/s) 3,500 acre-ft/yr (4.3 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 914 ft³/s (25.9 m³/s) Apr. 30, gage height, 10.53 ft (3.210 m); no flow for many days.

Period of record: Maximum discharge, 1,700 ft³/s (48.1 m³/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.

REMARKS.--Records good.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.02	.05	.05	.05	.05	762	7.7	37	.05	.03
2		0	.02	.05	.05	.05	.05	581	7.2	31	.05	.46
3		0	.02	.05	.05	.05	.05	480	6.1	23	.05	.02
4		0	.02	.05	.05	.05	.05	421	5.6	19	.05	.02
5		0	.02	.05	.05	.05	.05	370	5.3	22	.05	.02
6		0	.02	.05	.05	.05	.05	330	5.1	23	.05	.02
7		0	.02	.05	.05	.05	.05	316	4.8	19	.05	.03
8		0	.02	.05	.05	.05	.05	343	5.2	13	.04	.70
9		0	.02	.05	.05	.05	.05	359	29	10	.04	1.2
10		0	.02	.05	.05	.05	.05	285	167	9.0	.04	1.0
11		0	.03	.05	.05	.05	.05	201	299	7.5	.04	.82
12		0	.03	.05	.05	.05	2.0	143	336	6.5	.04	.61
13		.01	.03	.05	.05	.05	15	111	356	5.0	.04	.44
14		.01	.03	.05	.05	.10	35	88	281	3.5	.04	.35
15		.01	.03	.05	.05	.40	69	71	216	2.8	.04	.29
16		.01	.03	.05	.05	.50	106	58	175	2.5	.04	.36
17		.01	.03	.05	.05	.60	259	49	146	2.2	.04	.53
18		.01	.03	.05	.05	.30	377	43	127	2.0	.04	3.7
19		.01	.03	.05	.05	.13	447	36	115	1.8	.04	8.9
20		.01	.04	.05	.10	.10	349	29	110	1.6	.04	19
21		.01	.04	.05	.05	.05	312	23	103	1.4	.03	72
22		.01	.04	.05	.05	.05	306	19	95	1.2	.03	73
23		.01	.04	.05	.05	.05	351	17	80	1.0	.03	76
24		.01	.04	.05	.20	.05	449	15	65	.80	.03	68
25		.01	.04	.05	.10	.05	423	14	55	.60	.03	52
26		.01	.04	.05	.10	.05	429	12	48	.40	.03	38
27		.01	.04	.05	.05	.05	475	11	44	.30	.03	28
28		.01	.04	.05	.05	.05	629	11	42	.20	.03	21
29		.01	.04	.05	---	.05	850	10	37	.10	.03	17
30		.01	.05	.05	---	.05	884	9.0	32	.05	.03	13
31		---	.05	.05	---	.05	---	8.4	---	.05	.03	---
TOTAL	0	.18	.97	1.55	1.70	3.33	6767.55	5225.4	3005.0	247.50	1.20	496.50
MEAN	0	.006	.031	.050	.061	.11	226	169	100	7.98	.039	16.6
MAX	0	.01	.05	.05	.20	.60	884	762	356	37	.05	76
MIN	0	0	.02	.05	.05	.05	.05	8.4	4.8	.05	.03	.02
AC-FT	0	.4	1.9	3.1	3.4	6.6	13420	10360	5960	491	2.4	985

CAL YR 1974 TOTAL 14301.53 MEAN 39.2 MAX 759 MIN 0 AC-FT 28370
WTR YR 1975 TOTAL 15750.88 MEAN 43.2 MAX 884 MIN 0 AC-FT 31240

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, N. DAK.
(International gaging station)

LOCATION.--Lat 48°59'24", long 101°57'28", in NW¼SE¼NE¼ sec.33, T.164 N., R.87 W., Renville County, on right bank 0.8 mi (1.3 km) downstream from international boundary and 16 mi (26 km) northwest of Sherwood and at mile 511.4 (kilometre 822.8).

DRAINAGE AREA.--8,940 mi² (23,150 km²), approximately, of which about 5,900 mi² (15,300 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1930 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,603.73 ft (488.817 m) above mean sea level. Prior to Apr. 8, 1935, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--45 years, 123 ft³/s (3.483 m³/s), 89,110 acre-ft/yr (110 hm³/yr); median of yearly mean discharges, 78 ft³/s (2.21 m³/s), 56,500 acre-ft/yr (70 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 6,810 ft³/s (193 m³/s) May 5, gage height, 23.62 ft (7.199 m); minimum, 4.4 ft³/s (0.12 m³/s) Oct. 1, gage height, 1.55 ft (0.472 m).
Period of record: Maximum discharge, 12,400 ft³/s (351 m³/s) Apr. 11, 1969, gage height, 24.72 ft (7.535 m), backwater from ice; no flow at times in some years.
Flood in 1927 reached a stage of about 22 ft (6.7 m) from information by local residents.

REMARKS.--Records good. Some regulation at low flows by reservoirs in Canada. Some small diversions for irrigation and municipal supply. Records of chemical analyses and suspended sediment discharge for the water year 1975 are published in Section 2 of this report.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

REVISIONS (WATER YEARS).--WSP 1308: 1934, 1945. WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	7.8	6.0	6.0	5.5	5.0	6.0	5400	894	258	42	267
2	5.6	8.1	5.8	6.0	5.5	5.0	6.0	5550	828	274	40	202
3	5.6	8.8	5.6	6.0	5.5	5.0	6.0	5780	741	276	45	146
4	5.8	8.0	5.6	6.0	5.5	5.0	6.0	6300	673	241	44	122
5	5.6	8.1	5.6	6.0	5.5	5.0	6.0	6750	610	226	42	102
6	6.2	7.6	5.6	6.0	5.0	5.0	6.0	6690	520	213	37	94
7	6.3	7.4	5.4	6.0	5.0	5.0	6.0	6480	433	198	37	99
8	6.3	11	5.4	6.0	5.0	5.0	6.0	6180	389	170	44	99
9	6.9	13	5.4	5.5	5.0	5.0	6.0	5880	468	155	42	89
10	7.1	12	5.6	5.5	5.0	5.0	6.0	5620	708	152	43	77
11	6.4	11	5.6	5.5	5.0	5.0	6.0	5320	978	145	40	68
12	6.9	10	5.8	5.5	5.0	5.0	8.0	5100	1220	133	35	59
13	8.0	9.9	5.8	6.0	5.0	5.0	10	4880	1270	126	33	52
14	9.2	9.0	5.8	6.0	5.0	5.5	20	4690	1210	123	31	47
15	8.3	9.7	6.0	6.0	5.0	5.5	100	4470	1120	114	28	42
16	9.6	9.2	6.0	6.0	5.0	5.5	300	4220	1040	102	27	40
17	13	8.5	6.2	6.0	5.0	6.0	600	3960	939	108	26	40
18	12	8.3	6.2	6.0	5.0	6.5	1000	3690	838	111	26	51
19	11	8.1	6.0	5.5	5.0	6.5	1400	3450	778	111	28	87
20	9.9	8.1	6.2	5.5	5.0	7.0	1720	3240	768	89	31	116
21	9.4	8.0	6.4	5.5	5.0	7.0	2100	2940	708	81	31	172
22	9.0	7.8	6.2	5.5	5.0	7.0	2460	2620	613	80	30	416
23	9.9	7.6	6.0	5.5	5.0	7.0	2880	2250	509	80	28	384
24	11	7.4	6.0	5.5	5.0	7.0	3010	2120	457	77	27	301
25	9.0	7.2	6.0	5.5	5.0	6.5	3050	1860	415	74	33	256
26	8.5	7.0	6.0	5.5	5.0	6.5	3080	1720	327	70	35	227
27	8.5	6.8	6.0	5.5	5.0	6.5	3160	1610	351	63	39	207
28	8.3	6.6	6.0	5.5	5.0	6.5	3290	1510	331	57	46	190
29	8.0	6.4	6.0	5.5	---	6.0	3560	1380	297	53	67	170
30	7.8	6.2	6.0	5.5	---	6.0	4040	1190	269	48	67	150
31	7.8	---	6.0	5.5	---	6.0	---	1010	---	44	98	---
TOTAL	251.7	254.6	182.2	177.5	142.5	179.5	35854.0	123860	20702	4052	1222	4372
MEAN	8.12	8.49	5.88	5.73	5.09	5.79	1195	3995	690	131	39.4	146
MAX	13	13	6.4	6.0	5.5	7.0	4040	6750	1270	276	98	416
MIN	4.8	6.2	5.4	5.5	5.0	5.0	6.0	1010	269	44	26	40
AC-FT	499	505	361	352	283	356	71120	245700	41060	8040	2420	8670

CAL YR 1974 TOTAL 155282.98 MEAN 425 MAX 6280 MIN .39 AC-FT 308000
WTR YR 1975 TOTAL 191250.00 MEAN 524 MAX 6750 MIN 4.8 AC-FT 379300

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

RED RIVER OF THE NORTH BASIN

05115500 LAKE DARLING NEAR FOXHOLM, N. DAK.

LOCATION.--Lat 48°27'27", long 101°35'14", in NE¼NE¼ sec.1, T.157 N., R.85 W., Ward County, 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 (kilometre 691.9).

DRAINAGE AREA.--9,450 mi² (24,480 km²), approximately, of which about 6,200 mi² (16,100 km²) is probably noncontributing.

PERIOD OF RECORD.--April 1936 to current year (no winter records 1936-39).

GAGE.--Water-stage recorder. Datum of gage is 1,577.00 ft (480.670 m) above mean sea level. April 1936 to Aug. 8, 1963, nonrecording gages at same site and datum.

EXTREMES.--Current year: Maximum contents, 140,800 acre-ft (174 hm³) May 13, gage height, 23.80 ft (7.254 m); minimum, 70,400 acre-ft (86.8 hm³) Apr. 15, 16; gage height, 16.40 ft (4.999 m).
Period of record: Maximum contents, 140,800 acre-ft (174 hm³) May 13, 1975, gage height, 23.80 ft (7.254 m); minimum observed since April 1943 when reservoir was first filled to spillway level, 31,200 acre-ft (38.5 hm³) Feb. 18, 25, 1963, gage height, 10.04 ft (3.060 m).

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 hm³) between gage heights 0.0 ft, sill of control gages, and 21.0 ft (6.401 m), crest of spillway. Dead storage, 3,500 acre-ft (4.32 hm³). 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.

REVISIONS (WATER YEARS).--WSP 1338: 1942. WSP 2113: Drainage area.

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30-----	17.99	83,900	--
Oct. 31-----	17.74	81,800	-2,100
Nov. 30-----	17.44	79,200	-2,600
Dec. 31-----	17.38	78,700	-500
CAL YR 1974-----	--	--	+900
Jan. 31-----	17.18	77,000	-1,700
Feb. 28-----	17.02	75,700	-1,300
Mar. 31-----	16.87	74,400	-1,300
Apr. 30-----	20.52	107,200	+32,800
May 31-----	20.47	106,700	-500
June 30-----	19.41	96,700	-10,000
July 31-----	18.41	87,700	-9,000
Aug. 31-----	17.90	83,200	-4,500
Sept. 30-----	18.16	85,400	+2,200
WTR YR 1975-----	--	--	+1,500

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, N. DAK.

LOCATION.--Lat 48°22'20", long 101°30'18", in SW¼SE¼ sec.34, T.157 N., R.84 W., Ward County, 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 (kilometre 666.9).

DRAINAGE AREA.--9,470 mi² (24,530 km²), approximately, of which about 6,200 mi² (16,100 km²) is probably noncontributing.

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.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,560.73 ft (475.711 m) above mean sea level. 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.

AVERAGE DISCHARGE.--40 years, 128 ft³/s (3.625 m³/s), 92,740 acre-ft/yr (114 hm³/yr); median of yearly mean discharges, 63 ft³/s (1.78 m³/s), 45,600 acre-ft/yr (56 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 5,260 ft³/s (149 m³/s) May 23, gage height, 15.79 ft (4.813 m); minimum, 0.85 ft³/s (0.024 m³/s) Aug. 7, gage height, 4.71 ft (1.436 m).

Period of record: Maximum discharge, 5,380 ft³/s (152 m³/s) Apr. 17, 18, 1969, gage height, 15.84 ft (4.828 m); maximum reverse flow, 25 ft³/s (0.71 m³/s) Apr. 4, 1949 caused by backwater from Des Lacs River; no flow at times in many years.

REMARKS.--Records good. Flow completely regulated since 1936 by Lake Darling (see station 05115500) 15 mi (24.1 km) upstream and several small reservoirs, combined capacity, about 184,000 acre-ft (227 hm³). Some small diversions for irrigation and municipal supply. Records of chemical analyses and suspended sediment discharge for the 1975 water year are published in Section 2 of this report.

REVISIONS.--WSP 1308: 1905. WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	33	31	30	17	70	38	3150	2170	540	4.5	88
2	31	33	31	30	17	72	45	3770	2160	533	3.0	90
3	31	33	31	29	17	72	64	4090	2060	525	2.6	90
4	31	33	31	29	17	70	66	4040	1650	520	2.1	88
5	31	33	31	29	18	70	64	4060	1360	516	1.6	88
6	31	33	31	29	18	68	62	4280	1240	513	1.3	88
7	31	33	31	29	18	68	62	4280	1180	463	1.5	88
8	31	33	31	29	18	68	64	4170	1140	274	52	88
9	31	32	31	29	17	68	98	3820	1100	249	122	88
10	30	32	31	29	17	53	195	4400	894	249	122	88
11	30	32	31	30	17	39	420	4690	779	249	122	88
12	30	32	31	30	16	39	635	5090	770	249	112	85
13	30	33	31	30	16	39	654	5020	781	249	98	85
14	30	33	31	30	16	39	682	5040	908	216	98	85
15	30	33	31	30	16	39	680	5110	1090	115	98	85
16	30	33	30	30	16	39	658	5140	1140	115	98	85
17	30	33	30	30	16	39	605	5140	1160	119	98	85
18	30	33	30	30	16	39	569	5160	1160	119	98	82
19	30	33	30	28	16	39	551	5110	1180	119	98	85
20	30	34	30	18	17	38	558	5160	1210	119	95	98
21	30	34	30	18	17	37	631	5140	1200	119	92	98
22	29	33	30	18	17	37	918	5140	1200	123	90	100
23	29	34	30	18	17	37	1090	5110	1190	123	92	100
24	29	34	30	17	17	37	1210	4200	1180	123	90	98
25	29	33	30	17	17	37	1760	3900	1040	123	90	95
26	29	32	30	17	17	37	2750	3720	781	123	90	92
27	30	32	30	17	31	37	2330	3550	673	123	90	92
28	30	32	30	17	66	37	2290	2840	610	123	92	92
29	30	32	30	17	---	37	1790	2650	572	123	88	95
30	30	32	30	17	---	37	2030	2330	551	119	88	95
31	33	---	30	17	---	37	---	2200	---	57	88	---
TOTAL	943	985	945	768	535	1475	23569	131500	34129	7330	2317.6	2704
MEAN	30.4	32.8	30.5	24.8	19.1	47.6	786	4242	1138	236	74.8	90.1
MAX	37	34	31	30	66	72	2750	5160	2170	540	122	100
MIN	29	32	30	17	16	37	38	2200	551	57	1.3	82
AC-FT	1870	1950	1870	1520	1060	2930	46750	260800	67690	14540	4600	5360
CAL YR 1974	TOTAL	170457.84	MEAN	467	MAX	3310	MIN	.02	AC-FT	338100		
WTR YR 1975	TOTAL	207200.60	MEAN	568	MAX	5160	MIN	1.3	AC-FT	411000		

RED RIVER OF THE NORTH BASIN

05116500 DES LACS RIVER AT FOXHOLM, N. DAK.

LOCATION.--Lat 48°22'14", long 101°34'11", in NW¼NE¼NW¼ sec.2, T.156 N., R.85 W., Ward County, on left bank 200 ft (60 m) upstream from county highway bridge in Foxholm, and at mile 23.0 (kilometre 37.0).

DRAINAGE AREA.--939 mi² (2,432 km²), of which about 400 mi² (1,040 km²) 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.

GAGE.--Water-stage recorder. Datum of gage is 1,632.98 ft (497.732 m) above mean sea level. June 14 to Oct. 23, 1955, nonrecording gage at site 200 ft (60 m) downstream from present gage at same datum. See WSP 1728 to 1913 for history of changes prior to June 14, 1955.

AVERAGE DISCHARGE.--32 years, 29.0 ft³/s (0.821 m³/s), 21,010 acre-ft/yr (25.9 hm³/yr); median of yearly mean discharges, 17 ft³/s (0.48 m³/s), 12,300 acre-ft/yr (15 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,670 ft³/s (75.6 m³/s) Apr. 29, gage height, 19.06 ft (5.809 m); minimum daily, 3.0 ft³/s (0.085 m³/s) Feb. 5-19; minimum gage height, 2.48 ft (0.756 m) Oct. 4.
Period of record: Maximum discharge, 3,660 ft³/s (103.7 m³/s) Apr. 30, 1970, gage height, 20.71 ft (6.312 m), from floodmark; no flow at times in some years.

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 (78.9 hm³). Some small diversions for irrigation above station. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	28	14	9.0	3.5	8.0	5.0	1120	202	175	70	100
2	14	28	14	9.0	3.5	8.0	5.0	786	194	170	68	104
3	11	28	14	9.0	3.5	8.0	5.5	634	181	165	70	108
4	9.0	28	14	9.0	3.5	5.0	5.5	565	177	160	66	106
5	33	27	14	9.0	3.0	5.0	5.5	522	172	155	62	105
6	36	26	14	9.0	3.0	5.0	5.5	490	163	150	59	105
7	35	26	14	9.0	3.0	5.0	6.0	475	154	145	61	103
8	33	26	14	9.0	3.0	4.5	6.0	517	150	140	103	103
9	32	25	14	9.0	3.0	4.0	6.0	538	163	135	92	99
10	32	25	14	8.0	3.0	4.0	6.5	483	261	130	74	94
11	30	24	14	6.0	3.0	4.0	7.0	450	360	125	70	92
12	30	23	14	4.0	3.0	4.0	8.0	429	292	120	67	89
13	30	22	14	4.0	3.0	4.5	25	407	233	115	65	87
14	28	20	14	4.0	3.0	5.0	50	344	215	110	65	84
15	27	20	14	4.0	3.0	5.0	70	268	207	105	64	81
16	20	18	14	4.0	3.0	6.0	180	262	205	100	64	79
17	17	18	14	4.0	3.0	7.0	230	261	210	110	63	76
18	17	18	14	4.0	3.0	8.0	300	260	197	110	63	78
19	23	18	14	4.0	3.0	9.0	570	257	194	100	62	93
20	36	18	14	4.0	3.5	10	900	253	420	96	62	114
21	35	16	12	4.0	3.5	10	1100	266	530	92	62	112
22	33	16	12	4.0	3.5	10	1210	311	372	88	62	107
23	33	16	12	4.0	4.0	9.0	1010	327	261	84	61	108
24	32	16	12	4.0	5.0	8.0	739	325	224	80	60	108
25	30	16	12	4.0	6.0	7.0	558	324	205	77	64	107
26	30	14	10	4.0	7.0	6.0	633	310	193	74	75	105
27	29	14	10	4.0	10	6.0	1220	280	180	72	85	102
28	28	14	10	4.0	12	6.0	1280	253	173	70	92	99
29	28	14	10	3.5	---	6.0	2530	234	168	68	96	96
30	28	14	10	3.5	---	5.5	1860	221	181	66	98	93
31	28	---	10	3.5	---	5.5	---	210	---	64	100	---
TOTAL	852.0	616	400	173.5	113.5	193.0	14536.5	12382	6837	3451	2225	2937
MEAN	27.5	20.5	12.9	5.60	4.05	6.23	485	399	228	111	71.8	97.9
MAX	36	28	14	9.0	12	10	2530	1120	530	175	103	114
MIN	9.0	14	10	3.5	3.0	4.0	5.0	210	150	64	59	76
AC-FT	1690	1220	793	344	225	383	28830	24560	13560	6850	4410	5830
CAL YR 1974 TOTAL	25463.30			MEAN 69.8		MAX 600	MIN 6.0	AC-FT 50510				
WTR YR 1975 TOTAL	44716.50			MEAN 123		MAX 2530	MIN 3.0	AC-FT 88700				

05117500 SOURIS (MOUSE) RIVER ABOVE MINOT, N. DAK.

LOCATION.--Lat 48°14'45", long 101°22'15", in NW¼NW¼SE¼ sec.17, T.155 N., R.83 W., Ward County, 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 (kilometre 625.1).

DRAINAGE AREA.--10,600 mi² (27,500 km²), approximately, of which about 6,700 mi² (17,400 km²) 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.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,545.75 ft (471.145 m) above mean sea level. May 5, 1903, to Sept. 30, 1928, Oct. 1, 1929, to Sept. 30, 1934, nonrecording gages at mile 377.6 (kilometre 607.6) 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 (kilometre 590.2), 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.

AVERAGE DISCHARGE.--72 years, 157 ft³/s (4.446 m³/s), 113,700 acre-ft/yr (140 hm³/yr); median of yearly mean discharges, 90 ft³/s (2.5 m³/s), 65,200 acre-ft/yr (80 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 5,700 ft³/s (161 m³/s) May 13, gage height, 20.33 ft (6.197 m); minimum, 18 ft³/s (0.51 m³/s) Feb. 8, gage height, 4.39 ft (1.338 m).
Period of record: Maximum discharge, 12,000 ft³/s (340 m³/s) Apr. 20, 1904, gage height, 21.9 ft (6.675 m) at site in Minot, from rating curve extended above 8,100 ft³/s (229 m³/s); no flow at times in some years.
Maximum stage at present site, about 23 ft (7.01 m) in April 1904. Maximum stage in Minot at least 3 ft (0.91 m) higher than 1904 peak, in 1881, according to Apr. 20, 1904 issue of Minot Daily Optic. This peak probably occurred in 1882.

REMARKS.--Records good, except those for the winter period which are fair. Flow almost completely regulated by Lake Darling (see station 05115500), 41 mi (66 km) upstream and several smaller reservoirs; combined capacity, about 248,000 acre-ft (305.8 hm³). Some small diversions for irrigation and municipal supply. Records of chemical analyses for the 1975 water year are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1308: 1905, 1909-14, 1918, 1924-25, 1927. WSP 1338: 1903-4, 1906, 1917, 1928, 1929(M). WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	69	37	42	21	33	42	4170	2420	771	124	142
2	67	66	39	42	21	44	48	4300	2260	754	83	198
3	55	66	39	42	21	60	47	4580	2270	742	69	213
4	45	66	39	42	21	75	51	4810	2060	737	64	210
5	42	66	39	42	21	83	62	4900	1790	728	62	207
6	51	66	39	42	21	71	69	4910	1530	720	62	204
7	64	66	37	42	21	66	83	5000	1380	709	62	207
8	66	66	39	42	20	66	75	5150	1290	632	79	204
9	66	64	37	42	20	64	69	5030	1280	468	136	201
10	64	64	35	42	20	62	67	4900	1340	396	210	198
11	64	64	35	42	20	60	140	5120	1270	399	198	195
12	60	62	35	40	20	48	440	5420	1180	393	195	189
13	62	62	35	40	20	47	680	5660	1130	373	184	186
14	62	48	36	40	20	47	740	5640	1070	352	170	186
15	58	48	36	40	20	42	760	5540	1130	280	170	144
16	58	48	37	40	20	42	780	5470	1230	189	167	144
17	55	47	39	38	21	47	800	5470	1270	184	167	141
18	51	45	42	38	21	47	850	5440	1270	186	164	149
19	50	45	39	36	20	47	950	5420	1280	175	161	204
20	53	44	44	36	20	45	1400	5450	1480	167	161	198
21	64	44	44	30	22	45	1600	5470	1580	164	161	238
22	66	44	44	25	22	45	1860	5420	1670	159	159	238
23	64	40	42	24	22	42	2030	5470	1540	167	156	228
24	64	40	40	24	21	39	2040	5260	1410	159	151	228
25	64	40	39	22	20	42	1960	4850	1330	156	148	225
26	62	40	37	21	21	44	2240	4600	1160	154	148	225
27	62	37	37	21	21	47	2980	4400	970	151	161	225
28	64	33	37	21	25	62	3640	4180	869	148	172	222
29	62	37	37	21	---	58	4130	3730	813	148	184	216
30	62	37	39	21	---	50	4170	3280	784	143	189	213
31	66	---	40	21	---	48	---	2780	---	148	192	---
TOTAL	1868	1564	1194	1061	583	1618	34823	151820	42056	11052	4509	6188
MEAN	60.3	52.1	38.5	34.2	20.8	52.2	1161	4897	1402	357	145	206
MAX	75	69	44	42	25	83	4170	5660	2420	771	210	238
MIN	42	33	35	21	20	33	42	2780	784	143	62	141
AC-FT	3710	3100	2370	2100	1160	3210	69070	301100	83420	21920	8940	12270
CAL YR 1974	TOTAL	195284.6	MEAN 535	MAX 3520	MIN	1.8	AC-FT 387300					
WTR YR 1975	TOTAL	258336.0	MEAN 708	MAX 5660	MIN	20	AC-FT 512400					

RED RIVER OF THE NORTH BASIN

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, N. DAK.

LOCATION.--Lat 48°09'35", long 100°43'45", in NW¼SW¼ sec.17, T.154 N., R.78 W., McHenry County, 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 (kilometre 485.9).

DRAINAGE AREA.--11,300 mi² (29,300 km²), approximately, of which about 6,900 mi² (17,900 km²) is probably noncontributing.

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.

GAGE.--Water-stage recorder. Datum of gage is 1,464.87 ft (446.492 m) above mean sea level. 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.

AVERAGE DISCHARGE.--38 years, 194 ft³/s (5.494 m³/s), 140,600 acre-ft/yr (173 hm³/yr); median of yearly mean discharges, 120 ft³/s (3.40 m³/s), 86,900 acre-ft/yr (110 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 5,510 ft³/s (156 m³/s) May 24, gage height, 16.94 ft (5.163 m); minimum daily discharge, 24 ft³/s (0.68 m³/s) Feb. 10-21.
Period of record: Maximum discharge, 5,960 ft³/s (169 m³/s) Apr. 30, 1969, gage height, 17.05 ft (5.197 m); minimum recorded, 0.3 ft³/s (0.008 m³/s) Aug. 11-19, 1937, Oct. 10-21, 1939.

REMARKS.--Records good, except those for the period of ice effect or missing gage-height record, which are fair. Flow regulated by reservoirs on Souris and Des Lacs Rivers, the largest of which is Lake Darling, 128 mi (206 km) upstream (see station 05115500), combined capacity about 248,000 acre-ft (306 hm³). Some small diversions for irrigation and municipal supply. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	76	49	38	26	40	45	3760	3950	1110	265	193
2	89	78	43	38	26	40	45	4300	3720	1020	243	206
3	89	78	35	38	26	38	45	4350	3500	958	253	206
4	89	80	34	38	26	38	45	4400	3320	926	230	199
5	89	78	34	38	26	38	45	4500	3070	892	175	204
6	87	76	30	38	26	36	45	4600	2830	869	144	209
7	78	73	29	38	26	34	50	4700	2620	848	115	206
8	56	71	34	38	26	32	60	4800	2440	827	101	201
9	40	69	34	38	26	30	80	4850	2310	802	87	199
10	49	67	34	38	24	32	90	4900	2180	772	115	199
11	71	67	35	36	24	34	100	4950	2110	690	113	193
12	71	65	35	34	24	36	150	5000	2070	582	153	191
13	67	65	35	34	24	45	300	5100	1980	504	204	191
14	67	53	38	34	24	60	500	5190	1850	492	212	188
15	58	48	38	34	24	120	800	5400	1760	492	212	190
16	76	51	38	34	24	230	1000	5440	1680	484	201	178
17	82	67	41	34	24	250	1200	5400	1610	468	191	178
18	69	73	43	34	24	200	1250	5310	1560	434	183	180
19	69	58	42	34	24	150	1300	5220	1550	403	173	199
20	67	53	42	34	24	150	1400	5280	1550	383	170	214
21	65	56	42	34	24	160	1550	5250	1540	340	170	250
22	64	62	42	34	26	140	1750	5280	1570	313	173	274
23	62	62	40	34	28	120	2050	5400	1640	297	175	222
24	60	53	40	34	30	100	2050	5480	1710	279	175	201
25	60	55	40	34	32	90	2100	5440	1740	272	170	222
26	65	56	40	34	34	80	2250	5310	1730	262	170	232
27	65	60	40	32	36	70	2380	5100	1680	230	167	222
28	67	56	40	30	38	60	2720	4770	1610	206	164	209
29	71	55	40	28	---	55	3120	4480	1480	222	196	204
30	71	49	40	28	---	50	3520	4330	1290	225	193	201
31	71	---	40	28	---	45	---	4160	---	250	178	---
TOTAL	2177	1910	1187	1072	746	2603	32040	152450	63650	16852	5471	6141
MEAN	70.2	63.7	38.3	34.6	26.6	84.0	1068	4918	2122	544	176	205
MAX	93	80	49	38	38	250	3520	5480	3950	1110	265	274
MIN	40	48	29	28	24	30	45	3760	1290	206	87	178
AC-FT	4320	3790	2350	2130	1480	5160	63550	302400	126200	33430	10850	12180
CAL YR 1974	TOTAL	210965.5	MEAN	578	MAX	3420	MIN	5.5	AC-FT	418500		
WTR YR 1975	TOTAL	286299.0	MEAN	784	MAX	5480	MIN	24	AC-FT	567900		

RED RIVER OF THE NORTH BASIN

101

05120200 WINTERING RIVER NEAR BERGEN, N. DAK.

LOCATION.--Lat 47°55'50", long 100°40'15", on west line of sec.4, T.151 N., R.78 W., McHenry County, on left bank, 6 mi (9.7 km) southeast of Bergen.

DRAINAGE AREA.--176 mi² (456 km²), of which about 50 mi² (130 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,587.91 ft (483.995 m).

AVERAGE DISCHARGE.--19 years, 6.31 ft³/s (0.179 m³/s), 4,570 acre-ft/yr (5.63 hm³/yr); median of yearly mean discharges, 5.0 ft³/s (0.14 m³/s), 3,600 acre-ft/yr (4.4 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 640 ft³/s (18.1 m³/s) Apr. 29, gage height, 5.10 ft (1.554 m); no flow for several months.
Period of record: Maximum discharge, 900 ft³/s (25.5 m³/s) Apr. 10, 1969, gage height, 5.90 ft (1.798 m); no flow for several months each year.

REMARKS.--Records good. Some regulation by Fish and Wildlife Service dams on Cottonwood and Wintering Lakes; controlled capacity, about 850 acre-ft (1.05 hm³). Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	0	397	7.3	7.6		0
2						0	0	268	6.7	31		0
3						0	0	194	6.2	110		0
4						0	0	143	6.0	70		0
5						0	0	103	5.5	34		0
6						0	0	67	5.1	22		0
7						0	0	56	4.9	15		0
8						0	0	89	6.0	9.7		0
9						0	0	80	38	6.5		0
10						0	1.0	52	178	4.9		0
11						0	5.0	37	186	4.2		0
12						0	10	29	110	3.5		0
13						0	15	24	76	2.9		0
14						0	30	25	58	2.5		0
15						0	350	25	44	2.2		0
16						0	400	25	36	1.7		0
17						0	428	21	34	1.3		0
18						0	388	17	30	.98		0
19						15	352	12	32	.78		.08
20						8.0	337	9.7	33	.59		.05
21						17	340	8.9	25	.43		0
22						6.0	302	7.9	19	.27		0
23						2.0	270	10	16	.17		0
24						1.0	235	20	13	.08		0
25						.50	182	20	11	.01		.27
26						.20	180	18	8.9	0		.39
27						0	174	16	6.7	0		.47
28						0	325	13	6.2	0		.47
29					---	0	584	10	5.7	0		.39
30					---	0	524	8.2	5.5	0		.31
31		---			---	0	---	7.6	---	0		---
TOTAL	0	0	0	0	0	49.70	5432.0	1813.3	1019.7	332.31	0	2.43
MEAN	0	0	0	0	0	1.60	181	58.5	34.0	10.7	0	.081
MAX	0	0	0	0	0	17	584	397	186	110	0	.47
MIN	0	0	0	0	0	0	0	7.6	4.9	0	0	0
AC-FT	0	0	0	0	0	99	10770	3600	2020	659	0	4.8
CAL YR 1974	TOTAL	2830.81	MEAN	7.76	MAX	75	MIN	0	AC-FT	5610		
WTR YR 1975	TOTAL	8649.44	MEAN	23.7	MAX	584	MIN	0	AC-FT	17160		

RED RIVER OF THE NORTH BASIN

05120500 WINTERING RIVER NEAR KARLSRUHE, N. DAK.

LOCATION.--Lat 48°10'14", long 100°32'20", on line between secs.10 and 11, T.154 N., R.77 W., McHenry County, 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 mi² (1,826 km²), of which about 420 mi² (1,090 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Altitude of gage is 1,480 ft (451 m) from river-profile map.

AVERAGE DISCHARGE.--38 years, 12.4 ft³/s (0.351 m³/s), 8,980 acre-ft/yr (11.1 hm³/yr); median of yearly mean discharges, 10 ft³/s (0.28 m³/s), 7,200 acre-ft/yr (8.9 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 575 ft³/s (16.3 m³/s) May 2, gage height, 7.73 ft (2.356 m); maximum gage height, 7.96 ft (2.426 m) Apr. 20, backwater from ice; minimum daily discharge, 0.80 ft³/s (0.023 m³/s) Jan. 12, 13.

0.80 ft³/s (0.023 m³/s) Jan. 12, 1935.
Period of record: Maximum discharge, 3,000 ft³/s (85.0 m³/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.

REMARKS.--Records fair. Some regulation by Fish and Wildlife Service dams on Cottonwood and Wintering Lakes; controlled capacity, about 850 acre-ft (1.05 hm³). Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	6.6	2.1	1.2	1.7	1.8	2.0	370	26	36	14	17
2	1.9	5.8	1.9	1.2	1.7	1.8	2.0	538	25	38	14	18
3	1.8	5.0	1.9	1.2	1.7	1.8	2.0	544	25	36	14	16
4	1.9	4.8	1.9	1.2	1.7	1.8	2.0	468	24	35	14	12
5	2.2	4.6	1.8	1.2	1.7	1.9	2.0	346	24	34	12	10
6	2.4	4.6	1.8	1.2	1.7	1.9	2.0	266	23	33	12	8.1
7	2.4	4.6	1.7	1.2	1.7	1.9	2.0	224	24	32	11	6.9
8	4.7	4.4	1.6	1.2	1.7	1.9	2.0	186	24	30	11	5.3
9	3.0	4.2	1.6	1.2	1.7	1.9	2.0	155	39	29	9.2	5.0
10	2.6	3.8	1.6	1.2	1.7	2.0	2.0	132	68	27	8.1	5.6
11	1.9	3.2	1.6	1.1	1.7	2.0	2.5	116	68	26	7.5	5.0
12	2.4	3.4	1.6	.80	1.7	2.0	3.0	111	80	25	6.9	5.0
13	2.4	3.0	1.6	.80	1.7	2.0	5.0	108	76	24	6.3	5.6
14	3.0	2.4	1.6	.90	1.7	2.2	8.0	156	57	24	5.8	6.0
15	2.6	2.5	1.6	1.0	1.7	2.6	10	167	45	23	5.6	6.6
16	2.5	3.8	1.4	1.8	1.7	2.8	15	122	41	22	5.3	6.0
17	2.5	3.8	1.4	1.8	1.7	3.0	30	98	39	23	5.3	6.9
18	2.5	4.0	1.4	1.7	1.7	3.5	40	83	37	24	5.6	14
19	2.2	4.0	1.4	1.7	1.7	4.0	50	74	35	22	5.6	30
20	2.6	3.2	1.4	1.7	1.7	5.0	150	69	36	21	5.3	30
21	2.4	3.4	1.4	1.7	1.7	8.0	350	59	34	19	5.0	23
22	2.5	3.6	1.4	1.7	1.7	10	433	54	32	18	5.0	17
23	2.6	3.1	1.4	1.7	1.7	7.0	373	54	32	19	5.3	14
24	3.0	3.2	1.4	1.7	1.7	5.0	338	55	36	18	5.0	11
25	2.6	3.1	1.4	1.7	1.8	4.0	323	50	41	17	8.7	10
26	2.6	3.0	1.2	1.7	1.8	3.5	343	43	43	16	5.6	9.6
27	2.5	2.8	1.2	1.7	1.8	3.0	338	38	41	14	4.6	10
28	2.5	3.0	1.2	1.7	1.8	3.0	356	33	39	14	4.6	11
29	2.6	3.1	1.2	1.7	---	2.5	460	29	38	12	17	9.2
30	2.5	2.5	1.2	1.7	---	2.0	333	28	38	12	23	7.5
31	4.0	---	1.2	1.7	---	2.0	---	27	---	12	19	---
TOTAL	79.1	112.5	47.1	44.00	48.0	97.8	3980.5	4803	1190	735	281.3	341.3
MEAN	2.55	3.75	1.52	1.42	1.71	3.15	133	155	39.7	23.7	9.07	11.4
MAX	4.7	6.6	2.1	1.8	1.8	10	460	544	80	38	23	30
MIN	1.8	2.4	1.2	.80	1.7	1.8	2.0	27	23	12	4.6	5.0
AC-FT	157	223	93	87	95	194	7900	9530	2360	1460	558	677
CAL YR 1974	TOTAL	3777.95	MEAN	10.4	MAX	100	MIN	.05	AC-FT	7490		
YR 1975	TOTAL	11759.60	MEAN	32.2	MAX	544	MIN	.80	AC-FT	23330		

RED RIVER OF THE NORTH BASIN

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05122000 SOURIS (MOUSE) RIVER NEAR BANTRY, N. DAK.

LOCATION.--Lat 48°30'20", long 100°26'04", in SE¼NW¼SE¼ sec.14, T.158 N., R.76 W., McHenry County, 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 (kilometre 366.9).

DRAINAGE AREA.--12,300 mi² (31,900 km²), approximately, of which about 7,600 mi² (19,700 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 1,427.56 ft (435.120 m) above mean sea level. Prior to Mar. 16, 1938, nonrecording gage at same site at datum 0.17 ft (0.052 m) lower.

AVERAGE DISCHARGE.--38 years, 211 ft³/s (5.976 m³/s), 152,900 acre-ft/yr (189 hm³/yr); median of yearly mean discharges, 130 ft³/s (3.68 m³/s), 94,200 acre-ft/yr (120 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 5,750 ft³/s (163 m³/s) May 25, gage height, 13.90 ft (4.237 m); minimum daily, 10 ft³/s (0.28 m³/s) Jan. 12, 13.
Period of record: Maximum discharge, 5,750 ft³/s (163 m³/s) May 25, 1975, gage height, 13.90 ft (4.237 m); no flow at times each year 1937-40, 1963.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by reservoirs on Souris, Des Lacs, and Wintering Rivers, total capacity, about 249,000 acre-ft (307 km³). Diversions for irrigation of about 7,600 acres (30.8 km²) at Eaton Dam about 42 mi (68 km) above station and other small diversions for irrigation and municipal supply. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	75	65	55	50	22	60	2400	4740	1580	376	240
2	81	79	65	55	50	22	60	2610	4660	1550	372	293
3	82	83	65	55	50	22	60	2830	4400	1520	376	295
4	79	86	65	55	50	24	60	3080	4360	1490	376	290
5	78	88	65	55	45	26	60	3610	4080	1440	371	249
6	80	90	60	55	40	28	60	3900	3740	1390	361	290
7	81	90	60	55	35	28	70	4250	3580	1330	346	289
8	82	91	60	55	30	30	80	4550	3420	1260	318	286
9	82	91	60	55	25	30	100	4700	3580	1190	282	283
10	81	90	60	55	25	32	120	4830	3610	1130	250	282
11	79	89	60	45	24	34	150	4910	3380	1090	226	279
12	74	87	60	10	24	36	120	5040	3170	1050	208	276
13	69	82	60	10	24	38	110	5120	3020	1010	198	273
14	65	75	60	12	24	40	100	5170	2800	961	199	269
15	65	75	60	14	24	42	130	5170	2630	898	218	265
16	66	70	55	16	24	44	150	5170	2560	831	238	261
17	68	70	55	20	24	46	200	5310	2380	784	259	257
18	70	70	55	25	24	48	300	5400	2250	770	271	265
19	71	70	55	30	24	50	550	5400	2190	727	276	282
20	84	70	55	35	24	55	750	5450	2140	686	270	290
21	94	70	55	40	24	60	750	5400	2090	647	262	299
22	88	70	55	40	24	60	700	5310	2030	613	255	313
23	86	70	55	45	24	65	750	5500	1940	592	246	324
24	84	70	55	45	24	70	950	5540	1860	555	240	328
25	77	70	55	50	24	70	1130	5640	1780	518	238	331
26	74	65	55	50	22	70	1340	5590	1710	485	238	320
27	71	65	55	50	22	70	1510	5500	1680	462	234	302
28	69	65	55	50	22	70	1690	5400	1640	445	230	286
29	68	65	55	50	---	65	1800	5310	1610	425	232	276
30	71	65	55	50	---	65	2060	5170	1600	398	242	270
31	73	---	55	50	---	60	---	4950	---	385	259	---
TOTAL	2371	2296	1805	1287	826	1422	15970	148210	84630	28212	8467	8643
MEAN	76.5	76.5	58.2	41.5	29.5	45.9	532	4781	2821	910	273	288
MAX	94	91	65	55	50	70	2060	5640	4740	1580	376	331
MIN	65	65	55	10	22	22	60	2400	1600	385	198	257
AC-FT	4700	4550	3580	2550	1640	2820	31680	294000	167900	55960	16790	17140
CAL YR 1974	TOTAL	203531.0	MEAN	558	MAX	3330	MIN	7.0	AC-FT	403700		
WTR YR 1975	TOTAL	304139.0	MEAN	833	MAX	5640	MIN	10	AC-FT	603300		

RED RIVER OF THE NORTH BASIN

05123000 LAKE METIGOSHE NEAR BOTTINEAU, N. DAK.

LOCATION.--Lat 48°59'05", long 100°20'52", in SE¼SW¼ sec.35, T.164 N., R.75 W., Bottineau County, 25 ft (7.6 m) east from northeast corner of bridge over Lake Metigoshe, 11.7 mi (18.8 km) northeast of Bottineau.

DRAINAGE AREA.--59 mi² (153 km²).

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) above mean sea level. 1931-32, non-recording gage on north abutment of bridge at datum 6.32 ft (1.93 m) lower (reduced to elevations above mean sea level). Sept. 4, 1953, to Jan. 19, 1955, nonrecording gage at present datum on east end of south abutment of bridge.

EXTREMES.--Current year: Maximum gage height, 9.70 ft (2.957 m) May 3; minimum gage height observed, 8.00 ft (2.438 m) Dec. 5.

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.

REMARKS.--Outlet of lake is a concrete dam with removable stoplogs; average crest elevation without stoplogs about 2,138.0 ft (651.66 m) above mean sea level. Lake level regulated since 1959 by dam and control works in the outlet of Sharpe Lake located on the principal tributary in Manitoba.

MONTHEND GAGE HEIGHT, IN FEET, AT 2400, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Oct. 31-----	8.12	Jan. 31-----	*8.10	Apr. 30-----	9.61	July 31-----	8.33
Nov. 30-----	*8.00	Feb. 28-----	*8.10	May 31-----	9.07	Aug. 31-----	8.26
Dec. 31-----	*8.10	Mar. 31-----	*8.15	June 30-----	8.47	Sept. 30-----	*8.45

* Estimated.

05123100 OAK CREEK AT LAKE METIGOSHE OUTLET NEAR BOTTINEAU, N. DAK.

LOCATION.--Lat 48°57'56", long 100°21'47", in SE&SE& sec.3, T.163 N., R.75 W., Bottineau County, at outlet of Lake Metigoshe, 10 mi (16 km) northeast of Bottineau.

DRAINAGE AREA.--59 mi² (153 km²).

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder and concrete control with stoplogs. Datum of gage is 2,130.00 ft (649.22 m) above mean sea level. 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.

AVERAGE DISCHARGE.--22 years, 4.43 ft³/s (0.125 m³/s), 3,210 acre-ft/yr (3.96 hm³/yr); median of yearly mean discharges, 2.1 ft³/s (0.059 m³/s), 1,500 acre-ft/yr (1.8 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 148 ft³/s (4.19 m³/s) May 3, gage height, 9.70 ft (2.957 m); minimum daily, 0.75 ft³/s (0.021 m³/s) Jan. 12-19; minimum gage height observed, 8.00 ft (2.438 m) Dec. 5. Period of record: Maximum discharge, 148 ft³/s (4.19 m³/s) May 3, 1975, gage height, 9.70 ft (2.957 m); no flow at times most years.

REMARKS.--Records fair. Flow regulated since 1959 by dam and control works on the outlet of Sharpe Lake located on the principal tributary in Manitoba. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	5.5	.95	.85	1.0	1.2	2.0	128	81	25	15	12
2	4.0	5.5	.90	.85	1.0	1.2	2.0	140	78	23	13	12
3	4.0	5.0	.85	.85	1.0	1.2	2.0	143	73	23	13	12
4	4.0	5.0	.80	.85	1.1	1.2	2.0	146	70	22	13	12
5	4.0	4.5	.80	.85	1.1	1.3	2.6	145	65	22	13	11
6	4.0	4.5	.80	.85	1.1	1.3	3.2	145	62	20	13	11
7	3.6	4.0	.80	.85	1.1	1.3	3.6	139	60	19	12	11
8	3.6	4.0	.85	.85	1.0	1.3	4.0	130	60	17	14	11
9	3.6	4.0	.90	.85	1.0	1.3	5.0	128	64	16	13	10
10	3.2	3.5	.90	.80	1.0	1.3	7.0	126	67	15	12	10
11	2.8	3.5	.90	.80	1.0	1.3	7.2	120	65	14	12	9.3
12	2.5	3.5	.90	.75	1.0	1.3	6.8	115	63	13	11	9.3
13	2.5	3.0	.90	.75	1.0	1.4	6.4	123	61	13	9.6	9.8
14	2.5	3.0	.85	.75	1.0	1.5	7.2	135	59	12	8.5	11
15	2.5	3.0	.85	.75	1.0	1.6	8.0	137	58	12	13	11
16	2.5	2.5	.85	.75	1.0	1.8	8.8	135	58	12	12	12
17	2.5	2.5	.85	.75	1.0	2.0	8.8	133	55	21	12	12
18	2.5	2.5	.85	.75	1.0	2.4	11	128	52	27	11	18
19	2.5	2.5	.85	.75	1.0	2.4	12	124	49	24	12	27
20	2.5	2.0	.85	.80	1.0	2.4	12	120	47	22	12	26
21	3.0	2.0	.85	.80	1.0	2.4	14	117	44	21	12	25
22	3.0	2.0	.85	.80	1.0	2.2	18	113	43	20	12	23
23	3.5	1.6	.85	.80	1.0	2.2	24	112	40	19	13	22
24	3.5	1.6	.85	.80	1.1	2.2	31	111	38	17	9.0	20
25	4.0	1.4	.85	.90	1.2	2.2	37	109	36	16	9.0	18
26	4.0	1.4	.85	.90	1.2	2.0	45	106	34	15	9.0	17
27	4.5	1.2	.85	.90	1.2	2.0	60	102	31	14	9.0	16
28	4.5	1.2	.85	.90	1.2	2.0	84	98	30	13	9.0	16
29	5.0	1.0	.85	.90	---	2.0	98	93	28	13	10	15
30	5.5	1.0	.85	.90	---	2.0	105	88	27	12	11	14
31	5.6	---	.85	.90	---	2.0	---	85	---	16	12	---
TOTAL	109.4	87.9	26.55	25.55	29.3	53.9	637.6	3774	1598	548	359.1	443.4
MEAN	3.53	2.93	.86	.82	1.05	1.74	21.3	122	53.3	17.7	11.6	14.8
MAX	5.6	5.5	.95	.90	1.2	2.4	105	146	81	27	15	27
MIN	2.5	1.0	.80	.75	1.0	1.2	2.0	85	27	12	8.5	9.3
AC-FT	217	174	53	51	58	107	1260	7490	3170	1090	712	879
CAL YR 1974 TOTAL	3484.10			MEAN 9.55	MAX 54	MIN 0	AC-FT 6910					
WTR YR 1975 TOTAL	7692.70			MEAN 21.1	MAX 146	MIN .75	AC-FT 15260					

RED RIVER OF THE NORTH BASIN

05123400 WILLOW CREEK NEAR WILLOW CITY, N. DAK.

LOCATION.--Lat 48°35'20", long 100°26'30", in NE¼NW¼ sec.23, T.159 N., R.76 W., McHenry County, 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 mi² (3,000 km²), approximately, of which about 430 mi² (1,110 km²) is probably noncontributing.

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

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.

AVERAGE DISCHARGE.--19 years, 48.1 ft³/s (1.362 m³/s), 34,850 acre-ft/yr (43.0 hm³/yr); median of yearly mean discharges, 18 ft³/s (0.51 m³/s), 13,000 acre-ft/yr (16 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,460 ft³/s (69.7 m³/s) Apr. 29, gage height, 15.54 ft (4.737 m); no flow for several months.

Period of record: Maximum discharge, 5,900 ft³/s (167 m³/s) Apr. 12, 1969, gage height, 16.76 ft (5.108 m); no flow at times each year.

REMARKS.--Records good. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	9.6	2.1	.20			0	2170	350	95	13	3.9
2	.11	9.6	1.5	.18			0	1780	327	90	13	4.5
3	.14	9.6	.78	.18			0	1460	302	81	13	6.6
4	.07	9.1	.78	.17			0	1230	270	75	11	10
5	.14	9.6	.74	.17			0	1060	240	74	10	10
6	.78	10	.82	.17			0	937	216	68	8.4	10
7	.82	10	.70	.15			0	875	195	63	8.2	11
8	.66	9.9	.49	.15			0	860	184	56	8.2	12
9	.62	10	.49	.15			0	840	208	50	8.2	7.1
10	.58	10	.58	.10			0	820	241	43	8.4	5.0
11	.52	10	.55	.08			0	798	252	40	10	4.9
12	.49	11	.52	.05			10	773	255	38	9.0	6.4
13	.52	10	.52	.02			100	751	254	37	8.4	5.9
14	1.1	7.3	.49	0			300	732	255	33	8.2	5.6
15	3.8	9.1	.52	0			500	710	258	31	7.9	5.4
16	7.3	8.5	.49	0			1310	687	265	28	7.3	6.1
17	7.3	8.8	.43	0			1150	666	264	28	7.1	6.1
18	6.2	8.0	.46	0			1000	639	260	34	6.9	8.4
19	6.0	7.6	.40	0			870	617	252	30	7.1	17
20	6.2	6.9	.34	0			800	598	243	30	6.7	17
21	6.7	6.5	.31	0			753	577	227	26	6.7	16
22	7.1	6.2	.37	0			721	559	208	25	6.4	15
23	7.8	5.4	.34	0			705	548	186	24	5.9	15
24	8.0	4.9	.31	0			679	537	168	21	5.3	16
25	8.5	4.7	.28	0			657	525	151	19	4.9	18
26	9.1	4.5	.26	0			646	506	138	17	5.0	22
27	9.1	4.4	.24	0			679	484	130	16	5.0	26
28	9.1	3.8	.22	0			1310	456	121	15	4.4	27
29	9.4	3.2	.22	0	---		2380	427	112	14	4.2	27
30	9.1	2.5	.22	0	---		2290	394	103	12	4.5	30
31	9.6	---	.20	0	---		---	372	---	14	4.4	---
TOTAL	136.91	230.7	16.67	1.77	0	0	16860	24390	6635	1227	236.7	374.9
MEAN	4.42	7.49	.54	.057	0	0	562	787	221	39.6	7.64	12.5
MAX	9.6	11	2.1	.20	0	0	2380	2170	350	95	13	30
MIN	.06	2.5	.20	0	0	0	0	372	103	12	4.2	3.9
AC-FT	272	458	33	3.5	0	0	33440	48380	13160	2430	469	744
CAL YR 1974	TOTAL	66256.73	MEAN	182	MAX	2810	MIN	0	AC-FT	131400		
WTR YR 1975	TOTAL	50109.65	MEAN	137	MAX	2380	MIN	0	AC-FT	99390		

PEAK DISCHARGE (BASE, 50 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-16	1800	14.40	1,480	6-16	1330	8.76	266
4-29	1500	15.54	2,460				

05123510 DEEP RIVER NEAR UPHAM, N. DAK.

LOCATION.--Lat 48°35'03", long 100°51'44", in SW¼NW¼ sec.22, T.159 N., R.79 W., McHenry County, 60 ft (18 m) downstream from county highway bridge, 0.8 mi (1.3 km) downstream from Little Deep River, and 6.3 mi (10.1 km) west of Upham.

DRAINAGE AREA.--975 mi² (2,525 km²), of which 605 mi² (1,567 km²) is probably noncontributing.

PERIOD OF RECORD.--September 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,430 ft (436 m), from topographic map.

AVERAGE DISCHARGE.--18 years, 15.3 ft³/s (0.433 m³/s), 11,080 acre-ft/yr (13.7 hm³/yr); median of yearly mean discharges, 0.8 ft³/s (0.023 m³/s), 580 acre-ft/yr (0.72 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,770 ft³/s (50.1 m³/s) May 2, gage height, 15.00 ft (4.572 m); no flow for several months.
Period of record: Maximum discharge, 6,760 ft³/s (191 m³/s) Apr. 12, 1969, gage height, 18.18 ft (5.541 m); no flow for part or all of each year.
Flood in April 1951 reached a stage of about 16 ft (4.88 m), discharge, 2,700 ft³/s (76.5 m³/s), from information by local residents.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	1670	29	34	19	
2							0	1740	27	35	16	
3							0	1540	24	34	14	
4							0	1240	23	34	11	
5							0	928	21	33	10	
6							0	712	21	30	8.2	
7							0	564	20	28	7.0	
8							0	484	19	25	7.2	
9							0	395	23	22	5.6	
10							0	328	30	20	4.4	
11							3.0	266	33	18	3.5	
12							5.0	208	35	16	2.8	
13							10	171	35	15	2.1	
14							20	139	34	13	1.9	
15							30	119	34	12	1.1	
16							35	101	36	12	1.6	
17							30	87	37	18	1.4	
18							25	75	45	20	1.2	
19							20	65	47	18	1.0	
20							100	59	46	18	.80	
21							1000	56	44	19	.60	
22							1020	51	43	21	.40	
23							715	49	42	24	.30	
24							615	48	41	24	.20	
25							548	46	40	23	.10	
26							520	45	38	22	.06	
27							540	43	37	22	.03	
28							722	39	36	22	0	
29							1090	36	35	21	0	
30							1390	34	35	19	0	
31		---			---	---	---	32	---	20	0	---
TOTAL	0	0	0	0	0	0	8438.0	11370	1010	692	121.49	0
MEAN	0	0	0	0	0	0	281	367	33.7	22.3	3.92	0
MAX	0	0	0	0	0	0	1390	1740	47	35	19	0
MIN	0	0	0	0	0	0	0	32	19	12	0	0
AC-FT	0	0	0	0	0	0	16740	22550	2000	1370	241	0
CAL YR 1974 TOTAL	21979.63											
WTR YR 1975 TOTAL	21631.49											
MEAN 60.2												
MAX 1740												
MIN 0												
AC-FT 43600												
AC-FT 42910												

PEAK DISCHARGE (BASE, 50 FT³/S).---Apr. 21, 1,300 FT³/S; May 2 (0900) 1,770 FT³/S (15.00 FT).

RED RIVER OF THE NORTH BASIN

05123600 EGG CREEK NEAR GRANVILLE, N. DAK.

LOCATION.--Lat 48°21'18", long 100°49'19", on west line of sec.10, T.156 N., R.79 W., McHenry County, 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 mi² (749 km²), of which 150 mi² (388 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,478.14 ft (450.537 m) above mean sea level (levels by Bureau of Reclamation).

AVERAGE DISCHARGE.--19 years, 5.73 ft³/s (0.162 m³/s), 4,150 acre-ft/yr (5.12 hm³/yr); median of yearly mean discharges, 3.2 ft³/s (0.091 m³/s), 2,300 acre-ft/yr (2.8 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 875 ft³/s (24.8 m³/s) May 1, gage height, 6.35 ft (1.935 m); no flow for several months.

Period of record: Maximum discharge, 1,710 ft³/s (48.4 m³/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.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	758	10	11	2.4	.46
2							0	488	10	9.9	2.3	.44
3							0	330	10	7.9	2.3	.42
4							0	238	9.0	6.7	2.3	.40
5							0	183	8.1	5.8	2.2	.38
6							0	138	7.9	4.4	2.2	.36
7							0	101	7.7	3.6	2.2	.34
8							0	91	10	2.8	2.2	.32
9							0	80	25	2.4	2.1	.30
10							0	70	45	2.1	2.1	.28
11							0	63	48	1.8	2.1	.26
12							0	58	44	1.7	2.0	.22
13							0	52	44	1.6	2.0	.14
14							0	46	43	1.6	1.8	.12
15							0	40	50	1.7	2.1	.12
16							0	34	67	1.9	1.8	.20
17							0	28	69	2.2	1.5	.16
18							5.0	22	63	2.7	1.4	.45
19							50	18	56	2.5	1.2	.86
20							230	18	50	2.4	1.1	.90
21							212	17	45	2.3	1.0	1.3
22							190	16	45	2.3	.98	1.8
23							181	15	45	2.3	.86	1.9
24							162	16	44	2.1	.74	2.0
25							136	17	39	1.8	.60	2.3
26							134	16	30	1.8	.58	2.3
27							183	15	22	1.7	.56	2.7
28							410	14	16	1.7	.54	3.3
29							722	12	11	1.6	.52	4.5
30							776	11	11	1.6	.50	6.8
31		---			---	---	---	10	---	2.4	.48	---
TOTAL	0	0	0	0	0	0	3391.0	3015	984.7	98.3	46.66	36.03
MEAN	0	0	0	0	0	0	113	97.3	32.8	3.17	1.51	1.20
MAX	0	0	0	0	0	0	776	758	69	11	2.4	6.8
MIN	0	0	0	0	0	0	0	10	7.7	1.6	.48	.12
AC-FT	0	0	0	0	0	0	6730	5980	1950	195	93	71
CAL YR 1974 TOTAL	4918.59											
MEAN 13.5												
MAX 305												
MIN 0												
AC-FT 9760												
WTR YR 1975 TOTAL	7571.69											
MEAN 20.7												
MAX 776												
MIN 0												
AC-FT 15020												

PEAK DISCHARGE (BASE, 20 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-20	--	--	250	6-17	0200	4.21	70
5-1	0200	6.35	875				

05123700 CUT BANK CREEK AT NORTH LAKE OUTLET NEAR GRANVILLE, N. DAK.

LOCATION.--Lat 48°23'10", long 100°46'00", on south line of sec.29, T.157 N., R.78 W., McHenry County, on left bank near left downstream wingwall of bridge, 9 mi (14 km) northeast of Granville and 13.5 mi (21.7 km) east of Deering.

DRAINAGE AREA.--534 mi² (1,383 km²), of which 290 mi² (751 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,477.25 ft (450.266 m) above mean sea level.

AVERAGE DISCHARGE.--19 years, 4.29 ft³/s (0.121 m³/s), 3,110 acre-ft/yr (3.83 hm³/yr); median of yearly mean discharges, no flow.

EXTREMES.--Current year: Maximum discharge, 328 ft³/s (9.29 m³/s) May 3, gage height, 4.36 ft (1.329 m); no flow for several months.

Period of record: Maximum discharge, 339 ft³/s (9.60 m³/s) Apr. 14, 1969, gage height, 3.78 ft (1.152 m); maximum gage height, 4.36 ft (1.329 m) May 3, 1975; no flow for most of the time.

REMARKS.--Records good except those for June, which are poor. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	265	47	68	11	3.0
2							0	286	44	60	11	3.2
3							0	307	41	53	10	3.3
4							0	304	40	47	9.4	3.1
5							0	289	38	41	9.2	3.0
6							0	268	40	37	9.1	2.9
7							0	262	45	32	8.5	2.6
8							0	250	50	26	8.0	2.8
9							0	230	70	23	7.6	2.6
10							0	215	80	20	7.3	2.1
11							0	194	80	15	7.0	2.0
12							0	186	80	14	6.7	2.0
13							0	172	90	13	6.3	2.0
14							0	157	100	13	6.2	1.9
15							0	148	110	12	6.6	1.8
16							0	132	130	13	6.4	1.8
17							0	121	150	13	6.0	1.8
18							0	113	170	15	5.7	1.8
19							0	100	180	14	5.1	2.3
20							2.0	93	190	13	4.9	2.6
21							10	79	180	12	4.8	2.9
22							24	75	170	12	4.9	3.0
23							33	71	160	12	4.9	3.0
24							43	70	150	11	4.8	3.1
25							54	67	140	11	4.2	3.0
26							67	62	129	10	3.9	2.9
27							81	59	117	10	3.8	2.8
28							112	58	92	10	3.6	2.7
29					---		156	53	87	9.2	3.8	2.9
30					---		230	50	76	10	3.8	2.4
31		---			---		---	48	---	12	3.6	---
TOTAL	0	0	0	0	0	0	812.0	4786	3071	661.2	198.1	77.3
MEAN	0	0	0	0	0	0	27.1	154	102	21.3	6.39	2.58
MAX	0	0	0	0	0	0	230	307	190	68	11	3.3
MIN	0	0	0	0	0	0	0	48	38	9.2	3.6	1.8
AC-FT	0	0	0	0	0	0	1610	9490	6090	1310	393	153
CAL YR 1974	TOTAL	4926.35	MEAN 13.5	MAX 75	MIN 0	AC-FT 9770						
WTR YR 1975	TOTAL	9605.60	MEAN 26.3	MAX 307	MIN 0	AC-FT 19050						

RED RIVER OF THE NORTH BASIN

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05123900 BOUNDARY CREEK NEAR LANDA, N. DAK.

LOCATION.--Lat 48°48'46", long 100°51'46", at west line sec.26, T.162 N., R.79 W., Bottineau County, on right bank 80 ft (24.4 m) downstream from bridge on county road, 5 mi (8 km) upstream from mouth and 6 mi (9.7 km) southeast of Landa.

DRAINAGE AREA.--230 mi² (596 km²), of which about 60 mi² (160 km²) is probably noncontributing.

PERIOD OF RECORD.--September 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,420.03 ft (432.825 m) above mean sea level.

AVERAGE DISCHARGE.--18 years, 12.0 ft³/s (0.340 m³/s), 8,690 acre-ft/yr (10.7 hm³/yr); median of yearly mean discharges, 5.5 ft³/s (0.16 m³/s), 4,000 acre-ft/yr (4.9 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,600 ft³/s (73.6 m³/s) Apr. 14, gage height, 12.43 ft (3.789 m), backwater from ice; no flow for several months.
Period of record: Maximum discharge, 3,580 ft³/s (101 m³/s) Apr. 9, 1969, gage height, 12.70 ft (3.871 m); no flow for several months each year.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1728: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01						0	583	15	2.0	.20	0
2	.01						0	403	14	1.0	.10	0
3	.01						0	290	13	.76	.06	0
4	.01						0	210	12	.47	.01	0
5	.01						0	148	11	.35	0	0
6	.01						0	116	10	.12	0	0
7	.01						0	94	8.0	.03	0	0
8	.01						0	72	6.0	.04	0	0
9	.01						0	64	10	.06	0	0
10	.01						0	51	12	.08	0	0
11	.01						2.0	44	15	.66	0	0
12	.01						70	37	15	1.2	0	0
13	.01						530	31	14	2.2	0	0
14	.01						1600	28	14	2.7	0	0
15	.01						1880	28	30	2.7	0	0
16	.01						900	24	60	2.3	0	0
17	.01						600	23	80	3.5	0	0
18	.01						500	21	60	6.1	0	0
19	.01						420	20	30	5.8	0	0
20	.01						403	21	20	5.5	0	.12
21	.01						313	22	10	4.9	0	3.5
22	.01						446	21	8.0	4.9	0	2.0
23	.01						215	21	6.1	4.0	0	2.0
24	.01						164	21	5.5	3.1	0	1.8
25	.01						111	22	4.9	2.3	0	1.4
26	.01						176	20	4.0	1.6	0	1.2
27	.01						343	20	3.3	1.2	0	1.3
28	0						987	19	3.1	.90	0	1.2
29	0						1370	18	2.9	.60	0	1.0
30	0						869	17	2.7	.40	0	.76
31	0							16		.30	0	
TOTAL	.27	0	0	0	0	0	11899.0	2525	499.5	61.77	.37	16.28
MEAN	.009	0	0	0	0	0	397	81.5	16.7	1.99	.012	.54
MAX	.01	0	0	0	0	0	1880	583	80	6.1	.20	3.5
MIN	0	0	0	0	0	0	0	16	2.7	.03	0	0
AC-FT	.5	0	0	0	0	0	23600	5010	991	123	.7	32
CAL YR 1974	TOTAL	11650.30	MEAN	31.9	MAX	1000	MIN	0	AC-FT	23110		
WTR YR 1975	TOTAL	15002.19	MEAN	41.1	MAX	1880	MIN	0	AC-FT	29760		

PEAK DISCHARGE (BASE, 50 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-14	2300	12.32	2,600	4-28	2400	11.45	1,720
4-22	0800	9.27	550	†	Unknown	7.07	About 90

†June 16 or 17

RED RIVER OF THE NORTH BASIN

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, N. DAK.
(International gaging station)

LOCATION.--Lat 48°59'47", long 100°57'29", in SW&SE¼ sec.30, T.164 N., R.79 W., Bottineau County, 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 (kilometre 248.6).

DRAINAGE AREA.--16,900 mi² (43,800 km²), approximately, of which about 10,300 mi² (26,700 km²) is probably noncontributing.

PERIOD OF RECORD.--July to October 1929, April 1930 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,402.52 ft (427.488 m) above mean sea level. 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.

AVERAGE DISCHARGE.--45 years (1930-75), 232 ft³/s (6.570 m³/s), 168,100 acre-ft/yr (207 hm³/yr); median of yearly mean discharges, 140 ft³/s (3.96 m³/s), 101,000 acre-ft/yr (120 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 6,700 ft³/s (190 m³/s) May 7, gage height, 16.66 ft (5.078 m); minimum daily, 16 ft³/s (0.45 m³/s) Sept. 7, 8.
Period of record: Maximum discharge, 6,700 ft³/s (190 m³/s) May 7, 1975; maximum gage height, 17.56 ft (5.352 m) Apr. 19, 1969; maximum daily reverse flow, 35 ft³/s (0.99 m³/s) Apr. 8, 1943, caused by backwater from downstream tributary inflow; no flow at times in some years.

REMARKS.--Records good. Flow regulated by dams on Souris River and tributaries, combined capacity, about 321,000 acre-ft (3,960 hm³). Diversion at Eaton Dam for irrigation of about 7,600 acres (30.8 km²) and other small diversions for irrigation and municipal supply above station. Records of chemical analyses and suspended sediment discharge for the water year 1975 are published in Section 2 of this report.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

REVISIONS (WATER YEARS).--WSP 1338: 1932. WSP 2113: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	76	21	21	22	24	100	3320	5420	2800	348	66
2	51	76	20	21	22	24	150	3600	5320	2650	170	73
3	42	76	20	22	22	24	150	4100	5280	2500	166	68
4	28	76	19	22	22	24	150	4700	5060	2350	166	66
5	26	76	19	22	21	24	150	5400	4890	2250	262	50
6	26	76	19	22	21	24	150	6080	4880	2150	474	19
7	26	76	19	22	22	23	150	6600	4870	2050	474	16
8	26	73	19	22	22	24	145	6320	4820	1950	432	16
9	26	48	19	22	22	24	145	6080	4770	1900	420	22
10	26	26	19	22	22	24	140	5880	4780	1880	372	22
11	25	25	19	22	22	24	140	5700	4690	1830	390	22
12	25	25	19	22	22	24	140	5730	4590	1750	426	22
13	24	28	19	22	22	24	145	5730	4480	1740	456	22
14	24	59	19	23	22	24	150	5640	4380	1700	390	22
15	24	22	19	23	23	24	150	5760	4280	1670	396	22
16	24	21	19	23	24	24	590	5790	4260	1640	420	23
17	27	107	19	22	24	28	1240	5730	4200	1540	444	24
18	31	267	20	22	24	32	1460	5680	4100	1490	278	30
19	30	256	19	22	24	31	1650	5580	4000	1460	71	25
20	28	222	20	22	24	32	1710	5540	3900	1430	68	24
21	24	145	20	22	23	46	1820	5470	3800	1410	68	24
22	24	135	20	22	24	58	1860	5580	3700	1390	68	25
23	36	135	19	22	24	58	1930	5580	3600	1370	68	29
24	49	135	19	22	23	58	1980	5640	3500	1310	69	113
25	88	138	20	22	23	58	2050	5640	3400	1260	69	300
26	148	166	20	22	24	58	2190	5580	3300	1260	68	306
27	148	194	20	22	24	56	2390	5580	3200	1200	69	300
28	148	148	20	22	24	56	2630	5580	3100	1140	69	300
29	170	85	20	22	---	58	2860	5440	3000	1100	71	300
30	231	22	20	22	---	58	3090	5420	2900	1040	69	300
31	163	---	20	22	---	56	---	5420	---	922	68	---
TOTAL	1832	3014	604	683	638	1126	31605	169890	126470	52132	7379	2651
MEAN	59.1	100	19.5	22.0	22.8	36.3	1054	5480	4216	1682	238	88.4
MAX	231	267	21	23	24	58	3090	6600	5420	2800	474	306
MIN	24	21	19	21	21	23	100	3320	2900	922	68	16
AC-FT	3630	5980	1200	1350	1270	2230	62690	337000	250900	103400	14640	5260

CAL YR 1974 TOTAL 342315 MEAN 938 MAX 5590 MIN 19 AC-FT 679000
WTR YR 1975 TOTAL 398024 MEAN 1090 MAX 6600 MIN 16 AC-FT 789500

NOTE.--Differences between figures published herein and corresponding figures in reports of the Water Survey of Canada are due to variations in automated program techniques.

LOCATION.--Lat 48°07'24", long 104°28'30", in SE4NW4 sec.3, T.27 N., R.56 E., Richland County, on right bank at downstream side of bridge on State Highway 16, 3 mi (5 km) southeast of Culbertson, 9.6 mi (15.4 km) downstream from Big Muddy Creek, and at mile 1,620.76 (2,607.80 km).

PERIOD OF RECORD.--July 1941 to December 1951, April 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,883.4 ft (574.06 m) above mean sea level, datum of 1929 (Corps of Engineers bench mark). July 1 to Nov. 6, 1941, water-stage recorder at site 400 ft (120 m) upstream at datum 0.11 ft (0.034 m) higher. Nov. 7, 1941, to Aug. 17, 1950, water-stage recorder at site 580 ft (177 m) downstream at present datum. Aug. 18, 1950, to Dec. 31, 1951, nonrecording gage on bridge at present datum. Apr. 1, 1958, to Nov. 1, 1967, water-stage recorder at site 500 ft (150 m) downstream at present datum.

EXTREMES.--Current year: Maximum discharge, 39,600 ft³/s (1,120 m³/s) July 13; gage height, 12.89 ft (3.929 m) minimum daily, 5,200 ft³/s (147 m³/s) Jan. 13.
Period of record: Maximum discharge, 78,200 ft³/s (2,210 m³/s) Mar. 26, 1943, gage height, 14.80 ft (4.511 m), from rating curve extended above 30,000 ft³/s (850 m³/s); maximum gage height, 19.14 ft (5.834 m) Mar. 23, 1960 (backwater from ice); minimum daily discharge, 575 ft³/s (16.3 m³/s) Nov. 22, 1941.

REMARKS. --Records good except those for winter period, which are poor. Flow partly regulated by Fort Peck Lake reservoirs above station. Diversions for irrigation of about 1,030,400 acres (4,170 km²) above station. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12900	11400	10000	8400	12000	13000	9500	12600	17600	37400	36700	15700
2	12900	11400	10000	8200	11500	13000	9500	13800	19900	37300	37100	15700
3	12900	11400	10000	8000	11200	13000	9500	14800	22500	36700	35500	15600
4	12200	10700	10500	8000	11000	13000	9500	14300	23300	37500	35000	15000
5	11400	10500	10500	8000	11500	13000	9500	13100	23000	37700	35600	15300
6	11900	10700	10100	7800	12000	13000	9800	11500	22700	36200	35400	15400
7	11800	10800	9680	7600	13000	13000	9800	11700	23200	37000	34700	15300
8	11700	11300	9580	7400	13500	13000	10000	12600	25200	38200	34600	15200
9	11400	11800	9780	7200	14000	13000	10000	13900	27100	38000	31400	15400
10	11300	11900	9830	7000	15000	13000	10000	16700	27000	36600	26400	15000
11	11000	11400	9990	6000	15500	12800	10000	19300	26400	36000	20800	15200
12	11100	10500	9810	5500	16000	12800	10000	20300	25800	37200	15400	16200
13	11000	10200	9910	5200	16000	12800	10000	20200	25300	39000	13100	15800
14	11100	11100	10000	6000	15500	13000	10000	19900	25200	37900	12900	15200
15	11300	11400	10000	7500	15000	13500	10000	19600	25300	37000	12800	14500
16	11200	10500	9500	10000	14500	14000	10000	19200	25500	37700	12400	15300
17	11200	10700	9400	14000	14000	14000	10000	20700	25400	37700	12300	15000
18	11200	11800	9200	17000	13500	14000	10500	22500	25400	38100	11600	14800
19	11100	11400	9000	17000	13000	14000	10900	22400	25700	37500	11500	14800
20	11400	11000	9000	17000	13500	14000	11400	22200	26000	37500	11400	14100
21	10900	11300	9000	17000	14000	14000	14000	22100	26000	36500	11500	14100
22	11000	11500	9000	16500	14000	14000	14100	21900	25900	36400	11200	14100
23	11300	11200	9000	16000	13500	14000	14800	21600	25800	36200	11600	13700
24	10300	11000	9000	16000	13500	13500	16400	21200	26400	36500	11600	14300
25	10000	11100	9000	16000	13200	12500	18900	20500	28300	36700	14600	14400
26	10100	11000	9000	16000	13000	12000	21100	19800	31900	36800	15300	14600
27	10100	9960	9000	15500	13000	11500	19700	19200	35300	36200	15600	14800
28	10100	10400	9000	15200	13000	11000	18100	18700	37300	36100	15000	14000
29	11100	10900	9000	15000	---	10500	15600	18300	37400	36500	14100	14400
30	11300	10500	8800	14000	---	10000	13400	17800	37800	36100	14400	14000
31	11300	---	8600	13000	---	9700	---	17300	---	36200	15200	---
TOTAL	349500	330760	294180	353000	378400	397600	366000	559700	799600	1148400	626700	448100
MEAN	11270	11030	9490	11390	13510	12830	12200	18050	26650	37050	20220	14940
MAX	12900	11900	10500	17000	16000	14000	21100	22500	37800	39000	37100	16200
MIN	10000	9960	8600	5200	11000	9700	9500	11500	17600	36000	11200	13700
AC-FT	693200	656100	583500	700200	750600	788600	726000	1110000	1586000	2278000	1243000	888800
CAL YR 1974	TOTAL	3960460	MEAN	10850	MAX	20000	MIN	3880	AC-FT	7856000		
WTR YR 1975	TOTAL	6051940	MEAN	16580	MAX	39000	MIN	5200	AC-FT	12000000		

MISSOURI RIVER MAIN STEM

06185600 MISSOURI RIVER STAGE GAGE NO. 4 NEAR NOHLY, MONT.

LOCATION.--Lat 48°02'10", long 104°09'40", in NE¼ sec.1, T.26 N., R.58 E., Richland County, on right bank 4.5 mi (7.2 km) northwest of Nohly at mile 1,595.7 (kilometre 2,567.5).

DRAINAGE AREA.--93,000 mi² (241,000 km²), approximately.

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft (566.928 m) above mean sea level. Prior to Apr. 18, 1962 at datum 60.00 ft (18.288 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 21.20 ft (6.462 m) Mar. 23, 1960, present datum; minimum daily recorded, 6.87 ft (2.094 m) Apr. 18, 1963.

REMARKS.--Records fair. Stage regulated by Fort Peck Reservoir.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.17	11.63						---	13.41	17.36	17.77	12.43
2	12.23	11.64						---	13.78	17.45	17.86	12.49
3	12.23	11.63						---	14.42	17.56	17.78	12.42
4	12.15	11.47						---	14.78	17.61	17.65	12.41
5	11.76	11.26						---	14.80	17.70	17.65	12.34
6	11.84	11.26						---	14.74	17.77	17.68	12.32
7	11.80	---						---	14.78	17.86	17.61	12.31
8	11.81	---						---	15.12	18.04	17.60	12.28
9	11.72	---						---	15.59	18.15	17.27	12.27
10	11.68	---						---	15.75	18.01	16.57	12.23
11	11.59	---						---	15.67	17.88	15.50	12.28
12	11.56	---						---	15.51	18.00	13.98	12.50
13	11.56	---						---	15.35	18.22	12.92	12.50
14	11.54	---						14.30	15.31	18.22	12.70	12.31
15	11.58	---						14.20	15.35	18.02	12.67	12.07
16	11.64	---						14.10	15.38	18.00	12.50	12.20
17	11.56	---						14.26	15.40	18.10	12.40	12.21
18	11.57	---						14.74	15.42	18.12	12.23	12.21
19	11.56	---						14.85	15.51	18.10	12.10	11.97
20	11.59	---						14.80	15.56	18.04	12.09	11.90
21	11.61	---						14.71	15.57	17.94	12.08	11.93
22	11.48	---						14.66	15.56	17.92	12.00	11.90
23	11.57	---						14.60	15.50	17.88	12.05	11.88
24	11.47	---						14.50	15.50	17.87	12.18	11.90
25	11.16	---						14.36	15.68	17.87	12.20	11.91
26	11.18	---						14.19	16.24	17.83	12.37	11.96
27	11.19	---						14.03	16.72	17.79	12.46	12.06
28	11.17	---						13.87	17.02	17.73	12.32	12.07
29	11.34	---						13.75	17.20	17.76	12.04	11.99
30	11.65	---						13.64	17.35	17.73	12.06	11.92
31	11.65	---						13.51	---	17.72	12.21	---
MEAN	11.63								15.47	17.88	14.15	12.17
MAX	12.23								17.35	18.22	17.86	12.50
MIN	11.16								13.41	17.36	12.00	11.88

MISSOURI RIVER MAIN STEM

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06185650 MISSOURI RIVER STAGE GAGE NO. 5 AT NOHLY, MONT.

LOCATION.--Lat 48°00'10", long 104°05'30", in SE¼ sec.16, T.26 N., R.59 E., Richland County, on downstream side of bridge 0.2 mi (0.3 km) northwest of Nohly at mile 1,587.7 (kilometre 2,554.6).

DRAINAGE AREA.--93,000 mi² (241,000 km²), approximately.

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,800.00 ft (548.640 m) above mean sea level.

EXTREMES.--Period of record: Maximum daily gage height recorded, 77.22 ft (23.537 m) Mar. 15, 1972; minimum daily recorded, 59.12 ft (18.020 m) Nov. 22, 1964.

REMARKS.--Records good. Stage regulated by Fort Peck Reservoir.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65.15	64.61				---	---	65.29	66.40	71.27	70.51	65.44
2	65.20	64.61				---	---	65.26	66.63	71.24	70.63	65.51
3	65.20	64.63				---	---	65.59	67.21	71.30	70.66	65.47
4	65.12	64.59				---	---	65.65	67.67	71.41	70.56	65.43
5	64.79	64.33				---	---	65.43	67.78	71.55	70.49	65.37
6	64.79	64.30				---	---	65.01	67.79	71.71	70.43	65.33
7	64.80	---				---	---	64.94	67.95	71.84	70.30	65.32
8	64.80	---				---	---	65.46	68.27	72.03	70.26	65.28
9	64.71	---				---	---	65.32	68.77	72.18	69.94	65.25
10	64.67	---				---	---	65.85	69.08	72.08	69.26	65.25
11	64.58	---				---	---	66.61	69.14	71.86	68.26	65.26
12	64.33	---				---	---	67.10	69.02	71.82	67.02	65.43
13	64.32	---				67.78	---	67.25	68.80	71.97	66.00	65.45
14	64.50	---				67.77	---	67.24	68.64	71.98	65.70	65.32
15	64.56	---				67.70	---	67.16	68.63	71.64	65.62	65.07
16	64.63	---				67.78	---	67.15	68.69	71.50	65.48	65.14
17	64.55	---				67.83	67.36	67.17	68.80	71.50	65.40	65.15
18	64.58	---				67.71	67.84	67.55	68.96	71.52	65.28	65.14
19	64.53	---				67.76	68.14	67.76	69.18	71.52	65.15	65.03
20	64.57	---				67.74	68.22	67.80	69.34	71.44	65.13	64.97
21	64.58	---				67.83	67.47	67.74	69.18	71.29	65.11	64.92
22	64.46	---				67.85	65.53	67.76	69.18	71.18	65.09	64.91
23	64.53	---				67.95	65.59	67.74	69.19	71.03	65.08	64.88
24	64.50	---				67.73	65.88	67.66	69.09	70.95	65.21	64.89
25	64.19	---				---	66.43	67.48	69.13	70.91	65.23	64.93
26	64.17	---				---	67.09	67.28	69.62	70.85	65.35	64.97
27	64.18	---				---	67.12	67.07	70.28	70.74	65.45	65.05
28	64.18	---				---	66.77	66.88	70.78	70.67	65.38	65.05
29	64.28	---				---	66.39	66.73	71.11	70.63	65.13	64.98
30	64.59	---				---	65.77	66.62	71.29	70.55	65.12	64.90
31	64.63	---				---	---	66.51	---	70.51	65.32	---
MEAN	64.62							66.65	68.85	71.38	67.08	65.17
MAX	65.20							67.80	71.29	72.18	70.66	65.51
MIN	64.17							64.94	66.40	70.51	65.08	64.88

YELLOWSTONE RIVER BASIN

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MONT.

LOCATION.--Lat 47°40'42", long 104°09'22", in SW¼NE¼SW¼ sec.9, T.22 N., R.59 E., Richland County, on left bank at Montana-Dakota Utilities Company powerplant, 0.2 mi (0.3 km) downstream from bridge on State Highway 23, 2.5 mi (4.0 km) south of Sidney, 3.0 mi (4.8 km) downstream from Fox Creek, and 30 mi (48 km) upstream from mouth.

DRAINAGE AREA.--69,103 mi² (178,977 km²). Area at site 4.5 mi (7.2 km) upstream, 68,812 mi² (178,223 km²).

PERIOD OF RECORD.--October 1910 to September 1931 (published as "at Intake"), October 1933 to current year. If monthly figures of diversion to Lower Yellowstone Canal at Intake are added to records at this site, records equivalent to those published as Yellowstone River at Glendive (1898-1910, 1931-34) can be obtained. Monthly discharge only for some periods, published in WSP 1309. Monthly figures of diversions into Lower Yellowstone Canal prior to 1951 published in WSP 1309, 1951-60 published in WSP 1729, 1961-65 published in WSP 1916, and 1966 to current year are published in annual reports.

GAGE.--Water-stage recorder. Datum of gage is 1,881.3 ft (573.42 m) above mean sea level (levels by Corps of Engineers). Jan. 1, 1911, to Sept. 30, 1931, nonrecording gage at site 32 miles (51 km) upstream at different datum. Apr. 9, 1934, to May 16, 1945, water-stage recorder at two sites within 500 ft (150 m) of highway bridge 0.2 mi (0.3 km) upstream and May 17, 1945, to Apr. 3, 1952, nonrecording gage on same bridge at datum 1.36 ft (0.415 m) higher. Apr. 4, 1952, to Nov. 19, 1967, water-stage recorder at site 4.5 mi (7.2 km) upstream at different datum.

AVERAGE DISCHARGE.--63 years, 13,140 ft³/s (372.1 m³/s), 9,520,000 acre-ft/yr (11.7 km³/yr).

EXTREMES.--Current year: Maximum discharge, 77,000 ft³/s (2,180 m³/s) July 9, gage height, 16.48 ft (5.023 m); minimum daily, 3,000 ft³/s (85.0 m³/s) Jan. 16.

Period of record: Maximum discharge observed, 159,000 ft³/s (4,500 m³/s) June 2, 1921, gage height, 12.6 ft (3.84 m), site and datum then in use; maximum gage height observed, 21.85 ft (6.660 m) Mar. 22, 1947, site and datum then in use (backwater from ice); minimum discharge, 470 ft³/s (13.3 m³/s) May 17, 1961, gage height, 2.73 ft (0.832 m), site and datum then in use.

REMARKS.--Records good except those for winter period, which are poor. Some regulation on tributary streams. Diversion for irrigation of about 1,250,000 acres (5,060 km²) above station. Lower Yellowstone Project Main Canal diverts from left bank in NW¼ sec.36, T.18 N., R.56 E., at Lower Yellowstone diversion dam at Intake about 36.6 mi (58.9 km) upstream for irrigation of about 52,000 acres (210 km²) of which about one-third lies above station. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8860	11100	8600	6800	6000	7800	7600	18700	24500	51100	23500	12000
2	8920	11400	8200	7000	5500	8000	7800	17400	23700	51200	26000	11700
3	8740	14200	7800	7000	4700	8500	8000	16300	25600	52500	26800	11100
4	8680	16000	7900	7000	4500	9500	8200	15300	28200	57000	26300	10200
5	8680	11900	8000	7000	4200	10000	8400	14300	29600	61500	23100	9720
6	8920	10200	8500	7000	4000	12000	8600	14900	34700	66400	21200	10100
7	8980	10400	9000	7000	4000	13000	8800	32000	40100	70600	20300	10200
8	8860	10600	9000	7000	4200	15000	9400	41900	39800	74100	18800	10200
9	9040	10200	9000	7000	4400	17000	10000	33400	43700	76300	17200	10100
10	9040	9930	9000	7000	4600	16000	11500	37200	49400	76300	16200	9980
11	8980	9750	9000	6500	4800	15000	13000	35500	52100	73100	15700	9810
12	8890	9660	9000	6000	5000	13000	12600	33600	50500	67700	15400	9190
13	8740	9660	8800	4500	5200	11000	12000	32300	44600	64200	14700	8920
14	8770	9630	8600	3600	5400	10000	12000	30200	38600	57600	14000	8920
15	9130	9550	8400	3400	5600	10000	12500	32700	35700	51600	13700	8950
16	9520	9520	8000	3000	6000	11000	14000	33400	40600	47800	13500	8980
17	9600	9550	7800	4000	6500	13000	15000	30700	46000	47400	13200	8980
18	9600	9600	7600	5000	7500	12500	15000	29900	50700	47800	13200	8950
19	9900	9550	7600	6500	8000	12000	15300	32100	55800	45900	13300	8920
20	9980	9490	7600	8000	8000	13000	14500	33100	57800	41900	13100	9070
21	9930	9430	7600	10000	7800	15000	15200	34000	52100	38400	13200	9250
22	9950	9370	7600	13000	7700	16000	14800	36800	56100	35500	14300	9580
23	9980	9340	7400	15000	7500	18000	15000	37400	55100	33100	13800	9810
24	9980	9340	7200	13000	7300	20000	15900	35900	50200	31200	13200	9720
25	10000	9280	7000	11000	7200	16000	15600	33600	47400	30100	13100	9660
26	10100	8680	6500	10000	7200	12000	16000	31000	48500	28800	12900	9810
27	10300	8380	6500	9000	7200	10000	16100	28900	52500	27800	12800	9810
28	10400	8290	6500	8500	7500	9500	16400	26400	58400	26700	12800	9720
29	10300	8290	6500	7900	---	9000	17400	24900	61500	25600	13100	9130
30	10300	8530	6500	7400	---	8000	17900	24200	56400	24400	12800	9130
31	10500	---	6500	7000	---	7800	---	24000	---	24200	12400	---
TOTAL	293570	300820	243200	232100	167500	378600	384500	902000	1349900	1507800	503600	291610
MEAN	9470	10030	7845	7487	5982	12210	12820	29100	45000	48640	16250	9720
MAX	10500	16000	9000	15000	8000	20000	17900	41900	61500	76300	26800	12000
MIN	8680	8290	6500	3000	4000	7800	7600	14300	23700	24200	12400	8920
AC-FT	582300	596700	482400	460400	332200	751000	762700	1789000	2678000	2991000	998900	578400

CAL YR 1974 TOTAL 5469260 MEAN 14980 MAX 75700 MIN 3600 AC-FT 10850000
WTR YR 1975 TOTAL 6555200 MEAN 17960 MAX 76300 MIN 3000 AC-FT 13000000

† - Diversions, in acre-feet, by Lower Yellowstone Canal, furnished by Bureau of Reclamation.

YELLOWSTONE RIVER BASIN

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06329590 YELLOWSTONE RIVER STAGE GAGE NO. 1 NEAR FAIRVIEW, MONT.

LOCATION.--Lat 47°48'34", long 104°02'36", on east line sec.29, T.24 N., R.60 E., Richland County, on left bank 3 mi (4.8 km) south of Fairview at mile 15.2 (kilometre 24.5).

DRAINAGE AREA.--70,000 mi² (181,000 km²), approximately.

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft (566.928 m) above mean sea level. Prior to Feb. 19, 1962 at datum 60.00 ft (18.288 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 23.78 ft (7.248 m) Mar. 21, 1960, present datum; minimum daily recorded, 9.10 ft (2.774 m) May 16-17, Aug. 12-13, 1961, present datum.

REMARKS.--Records fair.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.78					---	14.44	14.57	---	19.44	---	12.70
2	11.82					---	14.82	14.32	---	19.36	---	12.60
3	11.74					---	14.95	13.99	---	19.35	---	12.46
4	11.71					---	15.30	13.69	---	19.87	---	12.16
5	11.66					---	15.76	13.37	---	20.34	---	11.94
6	11.75					---	16.15	13.33	---	---	16.35	12.07
7	11.78					---	16.05	15.72	---	---	16.10	12.15
8	11.87					---	15.93	17.07	---	---	15.83	12.18
9	11.82					---	16.14	16.01	---	---	15.50	12.17
10	11.89					---	16.23	16.65	---	---	15.25	12.17
11	11.87					---	16.03	16.64	---	---	---	12.14
12	11.83					---	16.03	16.69	---	---	---	11.98
13	11.70					---	15.77	16.77	---	---	---	11.83
14	11.71					15.50	15.74	---	---	---	---	11.84
15	11.79					15.48	15.95	---	---	---	---	11.86
16	12.02					15.70	16.18	---	---	---	---	11.87
17	12.06					15.75	16.36	---	---	---	---	---
18	12.02					15.90	16.72	---	---	---	---	---
19	12.09					16.03	14.41	---	18.33	---	---	---
20	12.16					16.15	13.47	---	18.74	---	13.10	---
21	12.07					16.48	13.58	---	18.27	---	13.10	---
22	12.04					17.07	13.56	---	18.67	---	13.40	---
23	12.02					17.24	13.55	---	18.84	17.68	13.38	---
24	12.00					17.57	13.81	---	18.64	17.42	13.12	---
25	11.98					17.50	13.79	---	18.46	17.12	12.98	---
26	---					16.82	13.79	---	18.68	16.92	12.96	---
27	---					15.91	13.88	---	19.08	16.80	12.90	---
28	---					15.23	13.90	---	19.46	16.72	12.90	---
29	---					14.94	14.14	---	19.76	16.65	12.98	---
30	---					14.55	14.43	---	19.56	16.63	12.93	---
31	---					14.40	---	---	---	---	12.80	---
MEAN							15.03					
MAX							16.72					
MIN							13.47					

YELLOWSTONE RIVER BASIN

06329597 CHARBONNEAU CREEK NEAR CHARBONNEAU, N. DAK.

LOCATION.--Lat 47°51'10", long 103°47'40", in SW¼ sec.31, T.151 N., R.102 W., McKenzie County, Little Missouri National Grassland on right bank 45 ft (14 m) downstream from county highway bridge, 1.5 mi (2.4 km) west of Charbonneau.

DRAINAGE AREA.--149 mi² (386 km²).

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

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--9 years, 13.1 ft³/s (0.371 m³/s) 9,490 acre-ft/yr (11.7 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 708 ft³/s (20.1 m³/s) Apr. 29, gage height, 5.51 ft (1.679 m); maximum gage height, 7.19 ft (2.192 m) Apr. 19, backwater from ice; minimum daily discharge, 0.05 ft³/s (0.001 m³/s) Feb. 4-10.
Period of record: Maximum discharge, 4,880 ft³/s (138 m³/s) Mar. 13, 1972, gage height, 8.56 ft (2.609 m); no flow at times most years.

REMARKS.--Records good except those for the winter period, which are fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.27	.46	.35	.50	.10	1.5	4.5	57	1.2	13	56	.50
2	.23	.46	.35	.55	.08	1.0	4.5	29	1.7	4.8	24	1.1
3	.23	.46	.38	.60	.08	1.0	4.0	18	1.3	3.8	7.5	.93
4	.22	.46	.42	.60	.05	1.0	4.0	7.5	1.2	3.0	3.3	.72
5	.23	.46	.39	.56	.05	2.0	4.0	4.8	1.2	2.3	1.5	.46
6	.29	.50	.37	.56	.05	3.0	3.5	3.8	1.1	2.3	.79	.35
7	.32	.56	.44	.54	.05	2.5	5.0	5.3	1.3	2.3	12	.35
8	.38	.56	.35	.54	.05	2.0	8.0	6.1	2.1	2.1	105	.42
9	.38	.42	.35	.50	.05	1.8	10	6.1	15	2.1	30	.46
10	.35	.42	.42	.40	.05	1.6	10	5.7	57	1.7	9.2	.38
11	.32	.42	.50	.20	.08	1.6	30	5.3	61	1.5	3.3	.25
12	.35	.46	.55	.10	.08	1.4	35	4.4	47	1.5	2.1	.23
13	.35	.60	.52	.10	.08	1.4	40	5.7	27	1.2	1.2	.25
14	.32	.66	.50	.10	.08	1.6	100	4.8	16	.93	.93	.25
15	.32	.66	.45	.12	.10	11	150	3.8	11	.86	.72	.25
16	.32	.66	.40	.12	.10	65	300	3.0	12	1.1	.50	.25
17	.35	.66	.40	.15	.10	75	350	3.3	11	2.1	.46	.29
18	.38	.66	.45	.20	.10	70	400	2.8	11	1.5	.38	.42
19	.38	.66	.45	.25	.15	45	450	1.9	7.0	.38	.35	1.4
20	.38	.66	.40	.30	.20	28	350	1.2	5.3	.35	.29	1.2
21	.38	.66	.40	.30	.40	20	220	1.2	4.1	.38	.29	1.3
22	.38	.66	.45	.30	.50	15	190	1.3	3.5	.35	.35	1.7
23	.38	.66	.45	.35	.60	10	107	1.5	3.0	.38	.38	.72
24	.38	.66	.40	.40	.80	9.0	68	1.7	2.8	.46	.46	.60
25	.42	.66	.35	.40	1.0	7.0	44	1.7	4.1	.42	.66	.50
26	.42	.66	.35	.30	2.0	6.0	179	1.9	181	.46	.60	.46
27	.46	.60	.40	.25	1.5	5.5	205	1.9	221	.38	.60	.72
28	.46	.56	.40	.20	1.5	5.5	108	1.9	102	.32	.56	.72
29	.46	.50	.45	.20	---	5.0	523	1.7	56	.29	.56	.66
30	.46	.42	.45	.15	---	5.0	149	1.2	28	.23	.56	.60
31	.46	---	.50	.10	---	4.5	---	1.1	---	13	.56	---
TOTAL	11.03	16.90	13.04	9.94	9.98	409.9	4055.5	196.6	896.9	65.49	265.10	18.44
MEAN	.36	.56	.42	.32	.36	13.2	135	6.34	29.9	2.11	8.55	.61
MAX	.46	.66	.55	.60	2.0	75	523	57	221	13	105	1.7
MIN	.22	.42	.35	.10	.05	1.0	3.5	1.1	1.1	.23	.29	.23
AC-FT	22	34	26	20	20	813	8040	390	1780	130	526	37
CAL YR 1974	TOTAL	3290.71	MEAN	9.02	MAX	169	MIN	0	AC-FT	6530		
WTR YR 1975	TOTAL	5968.82	MEAN	16.4	MAX	523	MIN	.05	AC-FT	11840		

PEAK DISCHARGE (BASE, 100 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-19	--	--	About 500	6-26	1030	4.97	388
4-26	2400	5.11	455	8- 8	0100	4.77	312
4-29	1000	5.51	708				

YELLOWSTONE RIVER BASIN

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06329610 YELLOWSTONE RIVER STAGE GAGE NO. 2 NEAR CARTWRIGHT, N. DAK.

LOCATION.--Lat 47°51'50", long 103°58'06", on south line sec.26, T.151 N., R.104 W., McKenzie County, on bridge on State Highway 23, 2 mi (3.2 km) west of Cartwright at mile 8.6 (kilometre 13.8).

DRAINAGE AREA.--70,000 mi² (181,000 km²), approximately.

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,800.00 ft (548.640 m) above mean sea level.

EXTREMES.--Period of record: Maximum daily gage height recorded, 82.70 ft (25.207 m) Mar. 15, 1972; minimum daily recorded, 58.58 ft (17.855 m) July 26, 1974.

REMARKS.--Records fair.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65.95	66.39					---	---	69.52	73.54	69.98	67.34
2	66.00	66.47					---	---	69.43	73.53	70.36	67.24
3	65.99	66.76					---	---	69.63	73.73	70.70	67.12
4	65.93	67.87					---	---	70.20	74.13	70.79	66.83
5	65.91	67.12					---	---	70.45	74.65	70.15	66.57
6	65.98	66.45					---	---	71.08	75.06	69.71	66.66
7	66.00	---					---	---	72.01	75.41	69.54	66.76
8	66.00	---					---	70.42	72.07	75.69	69.36	66.72
9	66.00	---					---	70.17	72.39	75.82	68.96	66.69
10	66.06	---					---	70.62	73.00	75.77	68.69	66.66
11	66.02	---					---	70.78	73.20	75.58	68.53	66.61
12	65.99	---					---	70.89	73.08	75.27	68.43	66.44
13	65.92	---					---	70.96	72.66	75.11	68.25	66.26
14	65.90	---					69.64	70.85	72.02	74.63	68.07	66.24
15	65.92	---					69.87	71.01	71.53	74.12	67.94	66.28
16	66.10	---					70.50	71.16	72.01	73.64	67.85	66.29
17	66.13	---					71.12	70.73	72.75	73.59	67.77	66.32
18	66.10	---					71.55	70.48	73.30	73.62	67.75	66.32
19	66.15	---					---	70.76	73.76	73.57	67.72	66.32
20	66.17	---					---	71.01	73.97	73.11	67.64	66.32
21	66.13	---					---	71.12	73.34	72.61	67.60	66.40
22	66.11	---					---	71.51	73.55	72.21	67.84	66.48
23	66.10	---					---	71.72	73.51	71.79	67.91	66.62
24	66.10	---					---	71.50	73.15	71.49	67.71	66.58
25	66.09	---					---	71.19	72.89	71.27	67.64	66.52
26	66.10	---					---	70.73	73.02	71.06	67.57	66.57
27	66.15	---					---	70.38	73.43	70.84	67.54	66.58
28	66.16	---					---	69.96	73.94	70.67	67.51	66.56
29	66.12	---					---	69.63	74.40	70.45	67.59	66.32
30	66.10	---					---	69.49	74.09	70.23	67.56	66.23
31	66.15	---					---	69.45	---	70.18	67.46	---
MEAN	66.05								72.45	73.30	68.46	66.56
MAX	66.17								74.40	75.82	70.79	67.34
MIN	65.90								69.43	70.18	67.46	66.23

YELLOWSTONE RIVER BASIN

06329620 YELLOWSTONE RIVER STAGE GAGE NO. 3 NEAR BUFORD, N. DAK.

LOCATION.--Lat 47°56'16", long 103°57'52", in SW¼ sec.35, T.152 N., R.104 W., McKenzie County, on left bank 4 mi (6.4 km) south of Buford at mile 3.3 (kilometre 5.3).

DRAINAGE AREA.--70,000 mi² (181,000 km²), approximately.

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,850.00 ft (563.880 m) above mean sea level. Prior to Apr. 19, 1962, at datum 50.00 ft (15.240 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 29.55 ft (9.007 m) Mar. 15, 1972; minimum daily recorded, 6.18 ft (1.884 m) Aug. 24, 1961, present datum.

REMARKS.--Records fair.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.29	10.94				---	---	13.10	14.75	---	16.11	12.05
2	10.41	11.46				---	---	12.94	14.73	---	16.47	11.96
3	10.36	11.96				---	12.84	12.63	14.95	---	16.83	11.84
4	10.32	13.37				---	12.98	12.30	15.59	---	16.81	11.50
5	10.24	12.75				---	13.54	11.97	15.93	---	16.31	11.27
6	10.28	11.82				---	14.11	11.79	16.53	---	15.87	---
7	10.34	---				---	14.29	13.87	17.56	---	15.59	---
8	10.34	---				---	14.11	16.02	17.75	---	15.35	---
9	10.35	---				---	14.28	15.08	---	---	14.90	---
10	10.43	---				---	14.60	15.70	---	---	14.42	---
11	10.41	---				---	14.51	15.87	---	---	13.96	---
12	10.34	---				---	14.53	16.03	---	---	13.55	---
13	10.29	---				---	14.40	16.03	---	---	13.17	---
14	10.25	---				13.84	14.28	15.97	---	---	12.93	---
15	10.26	---				13.62	14.50	15.90	---	---	12.74	---
16	10.54	---				13.82	15.03	16.51	---	---	12.59	10.93
17	10.61	---				13.97	15.40	16.10	---	---	12.46	10.97
18	10.60	---				14.04	15.84	15.85	---	---	12.44	11.03
19	10.64	---				14.26	16.16	16.06	19.34	---	12.59	11.11
20	10.72	---				14.34	13.62	16.39	19.67	---	12.58	11.13
21	10.69	---				14.95	12.28	16.47	19.12	---	12.58	11.23
22	10.64	---				15.17	11.97	16.85	19.44	---	12.67	11.32
23	10.63	---				15.42	11.92	17.18	---	17.78	12.75	11.48
24	10.62	---				15.57	12.24	16.97	---	17.48	12.60	11.48
25	10.56	---				14.89	12.37	16.61	---	17.28	12.50	11.34
26	10.55	---				---	12.54	16.13	---	17.07	12.47	---
27	10.63	---				---	12.77	15.70	---	16.91	12.40	---
28	10.65	---				---	12.71	15.27	---	16.70	12.35	---
29	10.61	---				---	12.77	14.91	---	16.50	12.41	---
30	10.60	---				---	13.10	14.77	---	16.33	12.28	---
31	10.65	---				---	---	14.71	---	16.26	12.17	---
MEAN	10.48							15.22			13.70	
MAX	10.72							17.18			16.83	
MIN	10.24							11.79			12.17	

MISSOURI RIVER MAIN STEM

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06329640 MISSOURI RIVER STAGE GAGE NO. 5A AT BUFORD, N. DAK.

LOCATION.--Lat 47°59'06", long 103°59'05", in SE¼ sec.15, T.152 N., R.104 W., Williams County, on left bank 1.5 mi (2.4 km) southwest of Buford at mile 1,580.7 (kilometre 2,543.3).

DRAINAGE AREA.--164,000 mi² (425,000 km²), approximately.

PERIOD OF RECORD.--April 1960 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,850.00 ft (563.880 m) above mean sea level. Prior to Mar. 8, 1962 at datum 50.00 ft (15.240 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 18.35 ft (5.593 m) July 6, 1975; minimum daily recorded, 2.63 ft (0.802 m) Aug. 15-16, 1966.

REMARKS.--Records fair. Stage regulated by upstream reservoirs.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.19	8.30				---	10.71	10.87	12.20	17.09	14.58	9.12
2	8.29	8.50				---	11.02	10.72	12.26	17.07	14.84	9.06
3	8.26	8.70				---	11.06	10.66	12.61	17.27	15.18	8.93
4	8.21	9.72				---	11.10	10.47	13.35	17.57	15.19	8.73
5	7.99	9.32				---	11.50	10.00	13.67	18.00	14.79	8.52
6	7.98	8.48				---	11.98	9.48	14.04	18.35	14.38	8.45
7	8.02	---				---	12.18	10.70	14.79	---	14.12	8.53
8	8.01	---				---	12.01	12.72	15.07	---	14.03	8.54
9	7.98	---				---	12.06	11.78	15.31	---	13.60	8.52
10	7.95	---				---	12.31	12.38	15.68	---	12.93	8.48
11	7.90	---				---	12.35	12.79	15.76	---	11.93	8.43
12	7.85	---				---	12.40	13.05	15.51	---	10.93	8.44
13	7.77	---				12.68	12.41	13.08	15.12	---	10.04	8.36
14	7.75	---				12.50	12.30	13.10	14.70	---	9.70	---
15	7.78	---				12.25	12.45	13.03	14.44	---	9.58	---
16	8.01	---				12.36	12.93	13.52	14.77	---	9.45	---
17	8.04	---				12.51	13.40	13.33	15.33	---	9.35	---
18	8.03	---				12.50	13.94	13.33	15.79	---	9.33	---
19	8.07	---				12.69	14.43	13.63	16.20	---	9.10	---
20	8.13	---				12.76	13.32	13.87	16.48	---	9.08	---
21	8.11	---				13.00	11.45	13.92	15.90	16.87	9.03	---
22	8.04	---				13.45	10.53	14.12	16.00	16.50	9.18	---
23	8.07	---				13.79	10.37	14.32	16.10	16.13	9.23	---
24	8.08	---				13.90	10.64	14.15	15.88	15.92	9.16	---
25	7.84	---				13.73	11.03	13.83	15.81	15.74	9.09	---
26	7.79	---				13.18	11.54	13.50	16.09	15.57	9.18	---
27	7.86	---				13.41	11.77	13.18	16.60	15.37	9.24	---
28	7.88	---				11.38	11.49	12.85	17.18	15.16	9.23	---
29	7.89	---				11.04	11.29	12.50	17.60	14.98	9.12	---
30	8.10	---				10.83	11.16	12.32	17.47	14.78	9.06	---
31	8.19	---				10.58	---	12.25	---	14.69	9.09	---
MEAN	8.00						11.90	12.56	15.26		11.06	
MAX	8.29						14.43	14.32	17.60		15.19	
MIN	7.75						10.37	9.48	12.20		9.03	

MISSOURI RIVER MAIN STEM

06329650 MISSOURI RIVER STAGE GAGE NO. 6 NEAR BUFORD, N. DAK.

LOCATION.--Lat 47°57'18", long 103°54'36", in SE¼ sec.30, T.152 N., R.103 W., Williams County, on right bank
5 mi (8 km) southeast of Buford at mile 1,576.0 (kilometre 2,535.8).

DRAINAGE AREA.--164,000 mi² (425,000 km²), approximately.

PERIOD OF RECORD.--1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,840.00 ft (560.832 m) above mean sea level. Prior to Apr. 17, 1962, at datum 40.00 ft (12.192 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 24.15 ft (7.361 m) June 29, 1975; minimum daily recorded, 8.23 ft (2.509 m) Aug. 15 and 22, 1963.

REMARKS.--Records fair. Stage regulated by upstream reservoirs.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

[illegible]

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LOCATION.--Lat 47°59'21", long 103°47'57", in NE¼ sec.13, T.152 N., R.103 W., McKenzie County, on right bank 5 mi (8 km) south of Trenton and at mile 1,566.7 (kilometre 2,520.8).

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,840.00 ft (560.832 m) above mean sea level. Prior to Aug. 7, 1962, at site 0.8 mi (1.3 km) upstream. Prior to May 29, 1963, at datum 40.00 ft (12.192 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 21.56 ft (6.572 m) July 10, 1975; minimum daily recorded, 4.34 ft (1.323 m) Aug. 19, 22, 1963.

REMARKS.--Records fair. Stage regulated by upstream reservoirs.

[illegible]

MISSOURI RIVER MAIN STEM

06329680 MISSOURI RIVER STAGE GAGE NO. 8 NEAR TRENTON, N. DAK.

LOCATION.--Lat 48°03'10", long 103°42'54", in NE¼ sec.30, T.153 N., R.101 W., McKenzie County, on right bank 5.5 mi (8.8 km) southeast of Trenton at mile 1,557.2 (kilometre 2,505.5).

DRAINAGE AREA.--164,000 mi² (425,000 km²), approximately.

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,830.00 ft (557.784 m) above mean sea level. Prior to Jan. 4, 1962 at datum 30.00 ft (9.144 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 27.15 ft (8.275 m) July 14, 1975; minimum daily recorded, 4.96 ft (1.512 m) Aug. 20, 1961, present datum.

REMARKS.--Records good. Stage regulated by upstream reservoirs and backwater from Lake Sakakawea.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.71	18.39				---	20.38	20.25	21.33	25.14	---	21.94
2	18.82	18.40				---	20.37	20.10	21.37	25.23	---	21.99
3	18.68	18.47				---	20.54	20.00	21.50	25.48	---	21.70
4	18.70	18.88				---	20.55	19.92	21.83	25.68	---	21.62
5	18.61	18.94				---	20.70	19.77	22.13	25.91	25.82	21.51
6	18.45	18.52				---	21.02	19.53	22.27	26.21	25.68	21.42
7	18.50	18.27				---	21.38	19.65	22.61	26.41	25.51	21.46
8	18.49	---				---	21.45	21.28	22.81	26.56	25.22	21.72
9	18.48	---				---	21.38	20.90	22.97	26.73	25.08	21.34
10	18.42	---				---	21.50	21.01	23.05	26.85	25.00	21.22
11	18.38	---				---	21.64	21.30	23.10	26.86	24.67	21.08
12	18.37	---				---	21.69	21.43	23.10	26.92	24.14	21.04
13	18.28	---				21.80	21.75	21.38	22.97	27.07	23.90	21.07
14	18.20	---				21.63	21.72	21.36	22.71	27.15	23.73	20.95
15	18.25	---				21.50	21.72	21.26	22.62	27.02	23.46	20.85
16	18.32	---				21.47	21.95	21.52	22.77	26.89	23.25	20.88
17	18.36	---				21.59	22.28	21.50	23.08	26.78	23.10	20.72
18	18.33	---				21.64	22.67	21.44	23.43	26.77	23.27	20.30
19	18.33	---				21.73	23.00	21.60	23.92	26.80	22.98	20.28
20	18.49	---				21.81	23.19	21.75	23.97	26.81	22.62	20.41
21	18.41	---				21.91	23.59	21.80	23.77	26.69	22.41	20.42
22	18.30	---				22.11	21.10	21.85	23.74	26.57	22.55	20.41
23	18.29	---				22.42	19.66	21.98	23.92	---	22.29	20.49
24	18.29	---				22.58	19.62	21.94	23.98	---	22.05	20.50
25	18.19	---				22.55	19.88	21.82	24.11	---	21.82	20.41
26	18.13	---				22.29	20.28	21.67	24.08	---	22.10	20.31
27	18.14	---				---	20.51	21.65	24.35	---	22.27	20.30
28	18.15	---				---	20.60	21.60	24.63	---	22.25	20.36
29	18.15	---				---	20.53	21.48	25.06	---	21.99	20.18
30	18.24	---				---	20.41	21.39	25.14	---	21.99	19.98
31	18.39	---				---	---	21.35	---	---	21.98	---
MEAN	18.38						21.24	21.14	23.21			20.90
MAX	18.82						23.59	21.98	25.14			21.99
MIN	18.13						19.62	19.53	21.33			19.98

MISSOURI RIVER MAIN STEM

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06330000 MISSOURI RIVER NEAR WILLISTON, N. DAK.

LOCATION.--Lat 48°06'40", long 103°43'00", in SE¼ sec.31, T.154 N., R.101 W., McKenzie County, on downstream end of right pier of Lewis and Clark Highway bridge 5 mi (8 km) southwest of Williston, 29.3 mi (47.1 km) downstream from Yellowstone River, and at mile 1,552.7 (kilometre 2,498.3).

DRAINAGE AREA.--164,500 mi² (426,000 km²), approximately.

PERIOD OF RECORD.--April 1966 to current year. Operated as a stage-discharge station October 1897 to July 1965.

GAGE.--Water-stage recorder. Datum of gage is 1,830.20 ft (557.845 m) above mean sea level. See WSP 1917 for history of changes prior to April 1966.

EXTREMES.--April 1966 to current year: Maximum daily gage height recorded, 24.77 ft (7.550 m) July 21, 1975; minimum daily recorded, 7.80 ft (2.377 m) Nov. 2, 1966.

REMARKS.--Records good. Records of chemical analyses for the water year 1975 are published in Section 2 of this report. Stage regulated by upstream reservoirs and backwater from Lake Sakakawea.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.78	---	18.45	---	18.94	19.37	18.74	18.00	18.72	22.67	23.99	21.09
2	17.89	---	18.24	---	18.66	19.51	18.84	17.89	18.72	22.75	24.31	21.01
3	17.61	---	18.47	---	18.42	19.71	18.95	17.83	18.79	22.95	24.28	20.77
4	17.69	---	18.58	---	18.32	19.75	18.96	17.84	18.95	23.02	24.28	20.70
5	17.76	---	18.67	---	18.20	19.77	19.08	17.83	19.19	23.09	24.46	20.65
6	17.39	---	18.68	---	18.14	19.80	19.30	17.76	19.38	23.20	24.31	20.55
7	17.52	16.98	18.70	---	18.16	19.90	19.55	17.68	19.60	23.35	24.18	20.58
8	17.45	16.99	18.67	18.05	18.22	20.14	19.61	18.90	19.79	23.52	23.85	20.92
9	17.51	17.03	18.56	18.16	18.40	20.16	19.59	18.75	19.88	23.74	23.75	20.43
10	17.45	17.03	18.52	18.20	18.54	20.30	19.65	18.70	19.98	23.95	23.88	20.28
11	17.35	17.00	18.57	18.10	18.62	20.27	19.77	18.87	20.23	24.05	23.63	20.13
12	17.46	17.00	18.55	18.09	18.82	20.19	19.78	18.92	20.32	24.20	23.18	20.10
13	17.25	16.90	18.51	17.90	19.04	20.08	19.79	18.92	20.27	24.39	23.17	20.14
14	17.21	16.85	18.51	17.41	19.12	19.94	19.76	18.93	20.18	24.49	23.03	20.03
15	17.25	16.89	18.47	17.01	19.14	19.85	19.74	18.89	20.15	24.53	22.71	19.96
16	17.12	16.90	18.38	16.90	19.19	19.81	19.87	19.02	20.31	24.57	22.49	20.00
17	17.14	16.86	18.25	17.10	19.23	19.90	20.11	19.02	20.70	24.52	22.39	19.77
18	17.12	16.89	18.12	17.60	19.30	19.94	20.30	18.98	20.95	24.44	22.60	19.11
19	17.12	16.94	17.93	18.29	19.30	19.99	20.55	19.04	21.47	24.58	22.21	19.21
20	17.30	16.92	17.86	18.73	19.27	20.00	20.61	19.17	21.21	24.74	21.83	19.48
21	17.10	16.90	18.00	19.05	19.30	19.96	20.78	19.24	21.04	24.77	21.66	19.47
22	17.03	16.87	18.29	19.06	19.33	19.98	19.56	19.33	21.11	24.72	21.80	19.47
23	17.03	16.89	---	19.02	19.40	20.18	17.95	19.45	21.35	24.52	21.44	19.50
24	17.00	16.87	---	19.34	19.45	20.27	17.87	19.41	21.52	24.62	20.98	19.55
25	16.95	16.95	---	19.50	19.39	20.26	18.03	19.32	21.64	24.67	20.69	19.41
26	16.89	16.77	---	19.39	19.28	20.21	18.32	19.22	21.32	24.57	21.22	19.26
27	16.87	16.70	---	19.39	19.30	20.06	18.35	19.15	21.70	24.60	21.41	19.20
28	---	16.76	---	19.44	19.32	19.62	18.36	19.06	21.85	24.59	21.40	19.25
29	---	17.59	---	19.38	---	19.15	18.29	18.92	22.38	24.52	21.10	19.01
30	---	18.60	---	19.30	---	18.96	18.14	18.80	22.51	24.50	21.11	18.88
31	---	---	---	19.25	---	18.80	---	18.77	---	24.34	21.08	---
MEAN					18.92	19.87	19.27	18.76	20.51	24.10	22.66	19.93
MAX					19.45	20.30	20.78	19.45	22.51	24.77	24.46	21.09
MIN					18.14	18.80	17.87	17.68	18.72	22.67	20.69	18.88

MISSOURI RIVER MAIN STEM

06330110 MISSOURI RIVER STAGE GAGE NO. 9 AT WILLISTON, N. DAK.

LOCATION.--Lat 48°08'13", long 103°36'16", in NE¼NE¼ sec.25, T.154 N., R.101 W., Williams County, on left bank levee at southeast edge of Williston 0.5 mi (0.8 km) upstream from Little Muddy Creek and at mile 1,546.2 (kilometre 2,487.8).

DRAINAGE AREA.--164,500 mi² (426,000 km²), approximately.

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,820.00 ft (554.736 m) above mean sea level. Prior to May 13, 1969, at site 900 ft (270 m) downstream. At datum 20.00 ft (6.096 m) lower prior to Apr. 7, 1962.

EXTREMES.--Period of record: Maximum daily gage height recorded, 34.22 ft (10.430 m) July 25, 28, 1975; minimum daily recorded, 5.44 ft (1.658 m) Aug. 20, 1961, present datum.

REMARKS.--Records fair. Stage regulated by upstream reservoirs and backwater from Lake Sakakawea.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.78	25.42	25.33	25.66	26.59	27.00	26.62	25.38	26.29	31.02	33.62	30.61
2	26.78	25.34	25.10	25.62	26.47	27.04	26.63	25.34	26.30	31.08	33.95	30.42
3	26.32	25.36	25.24	25.60	26.42	27.03	26.75	25.31	26.50	31.45	33.88	30.26
4	26.56	25.50	25.32	25.61	26.37	27.11	26.68	25.28	26.70	31.55	33.84	30.14
5	26.33	25.70	25.38	25.63	26.37	27.11	26.76	25.28	26.88	31.70	34.08	30.25
6	26.25	25.49	25.41	25.73	26.37	27.11	26.87	25.53	26.98	32.03	33.97	30.00
7	26.12	25.38	25.43	25.77	26.40	27.06	26.96	---	27.03	32.10	33.78	30.12
8	26.21	25.36	25.53	25.79	26.41	27.06	26.94	---	27.08	32.28	33.40	30.49
9	26.21	25.38	25.48	25.84	26.49	27.10	26.95	---	27.27	32.53	33.32	29.92
10	26.14	25.38	25.44	25.93	26.60	27.30	27.10	---	27.56	32.75	33.48	29.67
11	25.90	25.30	25.43	25.94	26.59	27.45	27.12	26.27	27.90	32.82	33.35	29.50
12	26.20	25.31	25.50	25.96	26.68	27.36	27.10	26.26	27.91	---	32.86	29.52
13	25.61	25.24	25.57	25.96	26.76	27.29	27.09	26.20	27.90	---	32.97	29.58
14	25.78	25.20	25.57	25.84	26.86	27.21	27.02	26.22	27.84	---	32.80	29.40
15	25.79	25.20	25.57	25.70	26.87	27.16	26.98	26.20	27.92	---	32.49	29.34
16	25.76	25.27	25.57	25.66	26.90	27.15	27.01	26.23	28.10	---	32.21	29.40
17	25.75	25.37	25.57	25.68	26.91	27.15	27.11	26.23	28.30	---	32.20	28.91
18	25.78	25.33	25.55	25.80	26.90	27.15	27.20	26.18	28.64	---	32.30	27.46
19	25.78	25.26	25.50	26.10	26.88	27.10	27.29	26.19	29.33	---	31.80	27.95
20	26.15	25.22	25.50	26.29	26.97	27.10	27.30	26.29	29.03	---	31.53	28.60
21	25.53	25.22	25.50	26.46	26.91	27.05	27.32	26.23	29.10	---	31.29	28.60
22	25.58	25.17	25.51	26.60	26.95	27.05	27.26	26.31	29.21	34.19	31.43	28.53
23	25.60	25.17	25.64	26.72	27.03	27.06	25.60	26.65	29.55	33.99	31.05	28.62
24	25.50	25.17	25.58	26.85	26.98	27.26	25.42	26.64	29.91	34.19	30.58	28.66
25	25.50	25.28	25.55	26.95	26.97	27.26	25.18	26.53	30.18	34.22	30.32	28.49
26	25.46	25.10	25.53	26.94	26.95	27.26	25.64	26.51	29.61	34.14	30.88	28.16
27	25.41	25.08	25.49	26.94	26.95	27.22	25.56	26.45	30.20	34.21	31.00	28.00
28	25.40	25.20	25.49	26.91	26.98	27.09	25.50	26.41	30.12	34.22	30.97	28.20
29	25.40	25.68	25.51	26.89	---	26.86	25.47	26.29	30.62	34.17	30.50	27.50
30	25.36	25.23	25.59	26.84	---	26.73	25.43	26.27	30.70	34.13	30.72	27.59
31	25.41	---	25.64	26.72	---	26.68	---	26.34	---	33.98	30.60	---
MEAN	25.88	25.31	25.48	26.16	26.73	27.11	26.60	---	28.36	---	32.30	29.13
MAX	26.78	25.70	25.64	26.95	27.03	27.45	27.32	---	30.70	---	34.08	30.61
MIN	25.36	25.08	25.10	25.60	26.37	26.68	25.18	---	26.29	---	30.32	27.46

LITTLE MUDDY RIVER BASIN

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06331000 LITTLE MUDDY RIVER BELOW COW CREEK NEAR WILLISTON, N. DAK.

LOCATION.--Lat 48°17'04", long 103°34'21", in NE¼NW¼ sec.5, T.155 N., R.100 W., Williams County, on left bank 37 ft (11 m) downstream from centerline of highway, 1 mi (2 km) downstream from Cow Creek, 4 mi (6 km) upstream from Camp Creek, 10 mi (16 km) northeast of Williston, and 13 mi (21 km) upstream from mouth.

DRAINAGE AREA.--875 mi² (2,266 km²), approximately, of which about 100 mi² (260 km²) is probably noncontributing.

PERIOD OF RECORD.--May 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,863.18 ft (567.897 m) above mean sea level.

AVERAGE DISCHARGE.--21 years, 34.2 ft³/s (0.969 m³/s), 24,780 acre-ft/yr (30.6 hm³/yr); median of yearly mean discharges, 28 ft³/s (0.79 m³/s), 20,300 acre-ft/yr (25 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,400 ft³/s (68.0 m³/s) Apr. 22, gage height, 11.04 ft (3.365 m); minimum daily, 3.5 ft³/s (0.099 m³/s) Jan. 13.
Period of record: Maximum discharge, 6,910 ft³/s (196 m³/s) Mar. 27, 1960, gage height, 13.57 ft (4.136 m); minimum, 0.2 ft³/s (0.006 m³/s) Nov. 27, 1960, Feb. 5, 1963, and June 4, 1968; minimum gage height, 2.26 ft (0.689 m) July 26, 1954.

REMARKS.--Records good. Some small diversions for irrigation. Some regulation by Lake Zuhl, Fish and Wildlife Service reservoir 22 mi (35 km) upstream. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	12	8.9	12	5.4	6.4	12	447	22	16	8.3	8.4
2	6.5	12	8.8	10	5.5	6.9	12	256	22	14	7.8	11
3	6.9	12	9.2	9.1	5.5	7.0	12	153	20	15	7.8	11
4	7.0	12	9.1	8.4	5.6	7.0	12	110	20	16	7.6	10
5	8.0	12	9.2	8.4	5.5	7.2	12	87	19	16	7.3	9.6
6	8.0	11	9.5	8.3	5.2	7.1	11	73	17	14	7.0	9.6
7	8.1	11	12	7.6	4.6	7.1	10	70	17	13	7.2	9.5
8	8.4	11	13	8.8	4.6	6.7	16	69	18	12	8.2	9.3
9	8.4	10	13	8.8	4.6	6.3	32	64	30	11	7.2	9.0
10	8.6	11	14	8.6	4.2	6.3	18	55	52	11	6.8	8.5
11	9.1	11	14	6.6	3.9	6.3	17	50	71	10	6.8	8.5
12	8.8	10	14	4.4	3.7	6.3	18	47	55	9.8	6.8	8.4
13	9.4	11	13	3.5	3.7	6.4	24	45	42	9.4	6.3	8.5
14	8.6	10	11	4.1	3.7	7.1	26	41	35	9.0	6.5	8.3
15	9.3	11	11	5.9	3.9	7.8	128	38	30	8.6	6.5	8.2
16	9.2	10	11	5.2	4.2	9.8	374	37	30	8.8	6.4	8.1
17	8.8	10	11	5.2	4.6	35	626	36	29	11	6.6	9.0
18	8.8	10	10	5.9	4.8	69	860	33	29	11	6.9	12
19	8.6	10	10	5.9	4.7	79	1220	31	27	10	7.2	14
20	8.4	11	10	6.0	4.6	57	1730	30	25	11	7.4	14
21	9.0	11	10	6.1	5.2	38	1490	27	23	10	7.3	14
22	8.4	12	11	6.0	5.1	22	1760	26	22	9.6	7.3	15
23	8.5	11	12	6.3	5.3	15	1220	26	20	9.2	7.5	15
24	8.8	11	13	6.6	5.7	13	814	26	19	8.4	8.6	14
25	8.3	11	13	6.5	5.8	12	502	27	17	8.2	9.2	13
26	8.8	11	14	6.4	5.7	13	369	34	18	7.8	8.9	12
27	8.8	14	14	6.2	6.0	12	323	34	16	7.6	8.6	13
28	9.2	10	14	6.1	6.1	12	316	30	16	7.4	8.6	12
29	9.6	9.2	14	5.9	---	12	616	25	15	7.0	9.1	13
30	9.4	9.2	14	5.5	---	12	445	23	15	7.1	9.4	12
31	11	---	13	5.4	---	12	---	22	---	8.8	8.9	---
TOTAL	265.2	327.4	363.7	209.7	137.4	524.7	13025	2072	791	327.7	236.0	327.9
MEAN	8.55	10.9	11.7	6.76	4.91	16.9	434	66.8	26.4	10.6	7.61	10.9
MAX	11	14	14	12	6.1	79	1760	447	71	16	9.4	15
MIN	6.5	9.2	8.8	3.5	3.7	6.3	10	22	15	7.0	6.3	8.1
AC-FT	526	649	721	416	273	1040	25840	4110	1570	650	468	650
CAL YR 1974	TOTAL	26433.1	MEAN	72.4	MAX	1160	MIN	3.1	AC-FT	52430		
WTR YR 1975	TOTAL	18607.7	MEAN	51.0	MAX	1760	MIN	3.5	AC-FT	36910		

PEAK DISCHARGE (BASE, 250 FT³/S).--Apr. 22 (0830) 2,400 FT³/S (11.04 FT); Apr. 29 (0815) 690 FT³/S (8.77 FT).

LOCATION.--Lat 48°04'50", long 103°32'44", in NE¼ sec.16 T.153 N., R.100 W., Williams County, on left bank 6 mi (9.7 km) southeast of Williston at mile 1,540.7 (kilometre 2,479.0).

PERIOD OF RECORD.--April 1959 to July 1975.

GAGE.--Water-stage recorder. Datum of gage is 1,820.00 ft (554.736 m) above mean sea level. Prior to Apr. 6, 1962, at datum 20.00 ft (6.096 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 30.22 ft (9.211 m) July 25, 1969; minimum daily recorded, 0.84 ft (0.256 m) May 19, Aug. 21, 1961, present datum.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

[illegible]

MISSOURI RIVER MAIN STEM

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06331650 MISSOURI RIVER STAGE GAGE NO. 11 NEAR WILLISTON, N. DAK.

LOCATION.--Lat 48°01'55", long 103°31'23", in SE¼ sec.34, T.153 N., R.100 W., Williams County, on left bank 10 mi (16 km) southeast of Williston at mile 1,534.4 (kilometre 2,468.8).

DRAINAGE AREA.--165,000 mi² (427,000 km²), approximately.

PERIOD OF RECORD.--May 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,810.00 ft (551.688 m) above mean sea level. Prior to Apr. 25, 1962, at datum 10.00 ft (3.048 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 43.93 ft (13.390 m) July 22, 1975; minimum daily recorded, 5.49 ft (1.673 m) Apr. 29, 1960, present datum.

REMARKS.--Records fair. Stage regulated by upstream reservoirs and Lake Sakakawea.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36.35	34.40				---	29.85	31.90	35.35	40.34	---	40.59
2	---	34.15				---	29.82	31.98	35.37	40.66	---	40.36
3	---	34.08				---	29.90	32.19	35.55	40.85	---	40.14
4	---	34.16				---	29.88	32.75	35.34	40.97	---	40.09
5	---	34.22				---	29.93	33.22	35.51	41.12	---	---
6	---	34.27				---	29.98	33.40	35.78	41.65	---	---
7	---	34.13				---	30.00	32.87	35.81	41.86	---	---
8	---	---				---	30.06	32.95	36.00	42.09	---	---
9	---	---				---	30.09	32.76	36.08	42.33	---	---
10	---	---				---	30.15	32.81	36.22	42.54	---	---
11	---	---				---	30.12	33.03	36.56	42.69	---	---
12	---	---				---	30.10	33.25	36.86	42.93	42.84	---
13	---	---				---	30.12	33.33	36.96	43.15	42.87	---
14	---	---				30.56	30.15	33.58	37.18	43.27	42.69	---
15	35.41	---				30.51	30.18	33.90	37.32	43.43	42.45	---
16	35.35	---				30.50	30.30	34.00	37.45	43.43	42.20	---
17	35.26	---				30.52	---	33.90	37.66	43.46	41.97	38.89
18	35.24	---				30.52	---	34.18	37.99	43.39	42.00	37.73
19	35.23	---				30.52	---	34.13	38.62	43.61	41.74	38.40
20	35.42	---				30.45	---	34.33	38.35	43.82	41.42	38.64
21	34.98	---				30.36	---	34.49	38.55	43.87	41.26	38.62
22	34.91	---				30.35	---	34.70	38.79	43.93	41.28	38.52
23	34.90	---				30.41	---	34.75	39.15	43.79	41.01	38.60
24	34.75	---				30.50	30.87	34.79	39.50	---	40.65	38.50
25	34.77	---				30.57	31.04	34.74	39.67	---	40.47	38.40
26	34.70	---				30.60	31.47	35.01	39.58	---	40.74	38.20
27	34.59	---				30.52	31.29	35.17	39.67	---	40.86	38.07
28	34.54	---				30.44	31.46	35.22	39.54	---	40.86	38.03
29	34.52	---				30.25	31.78	35.21	39.81	---	40.68	37.53
30	34.40	---				30.09	31.80	35.34	40.20	---	40.64	37.74
31	34.80	---				30.07	---	35.34	---	---	40.59	---
MEAN								33.85	37.55			
MAX								35.34	40.20			
MIN								31.90	35.34			

WHITE EARTH RIVER BASIN

06332000 WHITE EARTH RIVER AT WHITE EARTH, N. DAK.

LOCATION.--Lat 48°22'35", long 102°46'00", in SE¼SW¼ sec.36, T.157 N., R.94 W., Mountrail County, 35 ft (11 m) upstream from bridge on county highway, 0.2 mi (0.3 km) east of White Earth.

DRAINAGE AREA.--780 mi² (2,020 km²), approximately, of which about 290 mi² (750 km²) is probably noncontributing.

PERIOD OF RECORD.--August 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,070.00 ft (630.936 m) above mean sea level. Prior to Oct. 25, 1959, nonrecording gages at site 0.2 mi (0.3 km) upstream at datum 1.64 ft (0.500 m) higher.

AVERAGE DISCHARGE.--21 years, 26.6 ft³/s (0.753 m³/s), 19,270 acre-ft/yr (23.8 hm³/yr); median of yearly mean discharges, 15 ft³/s (0.42 m³/s), 10,900 acre-ft/yr (13 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,030 ft³/s (57.5 m³/s) Apr. 22, gage height, 17.00 ft (5.182 m); minimum daily, 0.90 ft³/s (0.025 m³/s) Jan. 12-15, Feb. 8-15;
Period of record: Maximum discharge, 2,370 ft³/s (67.1 m³/s) Mar. 16, 1972, gage height, 18.19 ft (5.544 m); no flow at times in some years.
Flood of 1929 reached a stage of 21.8 ft (6.64 m) former site and datum, from information by local residents.

REMARKS.--Records good, except those for the winter period, which are poor. Flow regulated by White Earth Reservoir 12 mi (19 km) upstream beginning August 1970, capacity, 1,600 acre-ft (1.97 hm³). Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	9.7	4.1	1.9	2.0	4.0	24	1080	64	27	5.8	5.1
2	3.2	7.0	4.1	1.9	2.0	4.0	20	791	57	25	5.4	7.5
3	2.9	7.0	4.1	2.2	2.0	4.0	18	634	30	21	5.2	8.7
4	2.6	7.1	3.5	2.5	2.0	3.0	16	539	32	20	4.9	6.4
5	3.1	6.3	3.4	2.6	2.0	3.0	16	456	32	19	4.7	6.3
6	3.5	6.1	3.2	2.6	1.0	4.0	16	392	32	17	4.1	5.8
7	3.4	6.3	3.5	2.6	1.0	5.0	24	373	30	16	3.9	5.9
8	3.1	5.9	3.5	2.5	.90	5.0	25	368	32	15	5.1	5.6
9	3.7	5.8	3.7	2.3	.90	4.0	24	284	424	14	5.2	5.4
10	3.2	5.4	3.4	2.0	.90	4.0	38	252	450	13	5.1	5.4
11	3.1	5.8	3.1	1.0	.90	3.0	69	234	211	12	4.7	5.2
12	3.1	6.1	3.1	.90	.90	2.8	105	212	151	11	5.2	4.4
13	2.9	5.6	3.2	.90	.90	3.1	165	188	136	10	6.1	4.4
14	3.2	5.9	3.1	.90	.90	4.1	244	170	121	9.7	9.7	4.2
15	3.4	5.2	2.9	.90	.90	17	420	158	108	9.1	10	4.2
16	3.2	4.9	2.9	1.0	1.0	59	912	152	107	9.1	9.3	4.2
17	3.1	5.1	2.6	1.0	1.0	170	824	128	91	9.8	8.2	3.9
18	3.1	4.9	3.2	1.0	1.0	169	1290	124	78	9.3	7.3	7.9
19	3.1	4.9	3.1	2.0	2.0	208	1440	119	78	8.8	7.1	40
20	3.1	4.7	3.1	2.0	2.0	171	1660	112	84	8.2	7.1	17
21	3.1	4.7	3.5	3.0	3.0	90	1610	108	71	7.9	8.0	16
22	3.2	4.7	3.5	3.0	3.0	73	1810	106	64	7.7	7.3	27
23	3.2	4.7	3.1	3.0	3.0	70	1510	104	57	7.3	7.0	35
24	3.2	4.7	2.3	3.0	4.0	52	1140	104	52	6.6	6.8	57
25	3.2	4.4	1.9	4.0	5.0	49	913	104	46	6.4	7.0	35
26	3.2	4.4	1.9	4.0	5.0	36	1110	99	43	7.0	7.1	28
27	3.4	4.4	1.9	3.0	5.0	31	947	92	39	6.6	6.4	24
28	3.5	4.1	1.7	3.0	4.0	30	1370	86	39	5.9	6.1	21
29	3.7	3.5	1.6	2.0	---	27	1560	79	37	5.9	5.8	19
30	3.9	3.9	1.6	2.0	---	30	1360	72	34	5.9	5.6	18
31	6.3	---	1.6	2.0	---	24	---	68	---	5.8	5.4	---
TOTAL	102.8	163.2	91.4	66.70	58.20	1359.0	20680	7788	2830	357.0	196.6	437.5
MEAN	3.32	5.44	2.95	2.15	2.08	43.8	689	251	94.3	11.5	6.34	14.6
MAX	6.3	9.7	4.1	4.0	5.0	208	1810	1080	450	27	10	57
MIN	2.6	3.5	1.6	.90	.90	2.8	16	68	30	5.8	3.9	3.9
AC-FT	204	324	181	132	115	2700	41020	15450	5610	708	390	868
CAL YR 1974 TOTAL	21467.36			MEAN 58.8	MAX 1060	MIN .35	AC-FT 42580					
WTR YR 1975 TOTAL	34130.40			MEAN 93.5	MAX 1810	MIN .90	AC-FT 67700					

BEAR DEN CREEK BASIN

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06332515 BEAR DEN CREEK NEAR MANDAREE, N. DAK.
(Hydrologic bench-mark station)

LOCATION.--Lat 47°47'14", long 102°46'05", in NW¼ sec.30, T.150 N., R.94 W., McKenzie County, on right bank 0.5 mi (0.8 km) upstream from county highway culvert and 5.5 mi (8.8 km) northwest of Mandaree.

DRAINAGE AREA.--74 mi² (192 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 1,947.58 ft (593.622 m) above mean sea level.

AVERAGE DISCHARGE.--9 years, 10.4 ft³/s (0.295 m³/s), 7,530 acre-ft/yr (9.28 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,300 ft³/s (36.8 m³/s) Apr. 22, gage height, 7.08 ft (2.158 m), backwater from ice; no flow Jan. 10 - Mar. 13.
Period of record: Maximum discharge, 2,840 ft³/s (80.4 m³/s) Mar. 13, 1972, gage height, 9.02 ft (2.749 m); maximum gage height, 10.03 ft (3.057 m) Apr. 6, 1969; no flow at times most years.

REMARKS.--Records fair except those for the winter period, which are poor. Records of chemical analyses and suspended sediment discharge for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	.53	.15	.10			6.0	30	.86	4.3	.49	.13
2	.40	.46	.15	.10		0	5.0	21	.92	3.8	.40	.19
3	.37	.40	.17	.08		0	5.0	14	.92	3.4	.28	.19
4	.34	.40	.17	.06		0	7.0	9.6	.92	3.4	.21	.17
5	.37	.31	.19	.06		0	7.0	7.5	.86	3.4	.21	.15
6	.34	.28	.19	.04		0	8.0	6.9	.86	4.9	.19	.15
7	.28	.25	.17	.04		0	10	7.2	.92	2.6	1.0	.15
8	.22	.25	.15	.04		0	50	7.8	1.2	5.9	4.5	.13
9	.21	.21	.18	.02		0	100	6.2	11	2.0	4.0	.13
10	.21	.21	1.0	0		0	120	6.9	41	.99	.93	.13
11	.21	.21	2.0	0		0	120	6.4	11	.86	.31	.13
12	.21	.21	1.5	0		0	140	4.7	5.4	.75	.19	.13
13	.21	.21	.90	0		0	150	3.6	3.4	.65	.15	.13
14	.21	.21	.60	0		1.0	160	2.8	2.3	.43	1.2	.13
15	.21	.21	.40	0		10	290	2.3	2.0	.34	3.5	.13
16	.21	.19	.30	0		45	520	1.5	3.6	.40	1.6	.15
17	.19	.19	.25	0		40	340	1.7	4.5	.61	.43	.17
18	.19	.17	.20	0		36	230	1.5	4.5	.40	.25	2.1
19	.19	.17	.20	0		30	430	1.1	6.4	.43	.19	13
20	.21	.19	.15	0		20	520	1.0	6.2	.43	.17	4.0
21	.21	.21	.15	0		15	604	1.0	4.7	.43	.15	1.9
22	.21	.25	.15	0		10	923	1.1	3.6	.40	.15	.57
23	.21	.25	.15	0		20	458	1.3	3.0	.40	.15	.37
24	.21	.21	.10	0		25	221	1.5	2.8	.37	.15	.23
25	.21	.19	.05	0		20	129	2.5	2.6	.40	.21	.19
26	.21	.19	.05	0		10	561	2.3	2.8	.40	.21	.19
27	.21	.17	.08	0		9.0	151	1.6	2.9	.46	.17	.40
28	.21	.15	.10	0		8.0	656	1.2	5.3	.43	.17	.34
29	.21	.15	.10	0	---	8.0	294	.82	5.9	.43	.15	.34
30	.21	.15	.10	0	---	7.0	82	.80	5.2	.40	.13	.31
31	1.0	---	.10	0	---	7.0	---	.80	---	.61	.13	---
TOTAL	8.28	7.18	10.15	.54	0	321.0	7297.0	158.62	147.56	68.12	21.97	26.43
MEAN	.27	.24	.33	.017	0	10.4	243	5.12	4.92	2.20	.71	.88
MAX	1.0	.53	2.0	.10	0	45	923	30	41	26	4.5	13
MIN	.19	.15	.05	0	0	0	5.0	.80	.86	.34	.13	.13
AC-FT	16	14	20	1.1	0	637	14470	315	293	135	44	52
CAL YR 1974 TOTAL	3126.79	MEAN	8.57	MAX	356	MIN	.05	AC-FT	6200			
WTR YR 1975 TOTAL	8066.85	MEAN	22.1	MAX	923	MIN	0	AC-FT	16000			

PEAK DISCHARGE (BASE, 100 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-16	--	--	550	4-26	1000	6.49	1,160
4-22	--	--	1,300	4-28	0800	5.88	852

SHELL CREEK BASIN

06332520 SHELL CREEK NEAR PARSHALL, N. DAK.

LOCATION.--Lat 48°03'11", long 102°08'10", in SE¼NE¼ sec.29, T.153 N., R.89 W., Mountrail County, on left bank 800 ft (240 m) downstream from bridge on county highway 6 mi (10 km) northwest of Parshall.

DRAINAGE AREA.--465 mi² (1,204 km²).

PERIOD OF RECORD.--August 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--10 years, 14.3 ft³/s (0.405 m³/s), 10,360 acre-ft/yr (12.8 hm³/yr); median of yearly mean discharges, 10 ft³/s (0.28 m³/s) 7,200 acre-ft/yr (8.9 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,220 ft³/s (34.6 m³/s) Apr. 26, gage height, 6.75 ft (2.057 m); no flow Feb. 5 to Mar. 14.
Period of record: Maximum discharge, 2,270 ft³/s (64.3 m³/s) Apr. 6, 1969, gage height, 7.60 ft (2.316 m); no flow at times each year.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	5.3	.66	.46	.03	0	.50	282	16	34	4.5	7.5
2	2.7	5.0	.55	.46	.03	0	.40	194	15	29	4.0	7.0
3	2.7	4.4	.53	.46	.03	0	.40	153	14	28	3.5	25
4	2.7	4.5	.50	.48	.01	0	.40	123	13	28	3.0	21
5	2.8	4.4	.50	.48	0	0	.40	97	13	26	3.0	16
6	2.8	4.0	.52	.47	0	0	.40	71	12	25	2.5	12
7	2.9	3.8	.54	.45	0	0	.50	63	12	22	4.0	10
8	2.8	3.6	.58	.42	0	0	.50	60	13	20	8.0	9.0
9	2.9	3.5	.52	.40	0	0	.50	50	57	19	8.5	8.0
10	2.8	3.4	.50	.36	0	0	.60	44	99	18	8.0	7.0
11	2.9	3.1	.58	.30	0	0	.80	39	65	16	7.5	6.0
12	2.9	2.8	.65	.20	0	0	10	34	39	14	7.0	5.5
13	3.0	2.6	.62	.10	0	0	30	31	60	13	8.0	5.0
14	3.0	2.9	.60	.08	0	0	100	29	111	13	10	4.0
15	2.9	2.7	.55	.06	0	1.0	200	26	167	12	12	3.5
16	3.0	2.5	.50	.06	0	5.0	290	24	167	11	11	3.0
17	3.0	2.3	.48	.06	0	10	240	22	147	50	10	3.0
18	3.2	1.6	.48	.06	0	40	275	20	133	80	10	6.5
19	3.1	2.1	.45	.06	0	50	275	19	183	45	9.5	18
20	3.0	2.7	.42	.08	0	40	430	18	307	18	8.5	21
21	3.0	1.9	.40	.08	0	30	580	19	.222	12	8.0	15
22	3.0	1.8	.40	.08	0	20	752	18	178	10	9.0	12
23	2.9	2.2	.38	.10	0	15	555	22	153	12	11	9.4
24	2.9	3.2	.36	.14	0	10	386	25	127	11	11	8.4
25	3.1	1.8	.38	.12	0	5.0	255	31	95	10	14	7.7
26	3.1	1.5	.40	.10	0	2.0	740	27	69	9.0	14	7.3
27	3.2	1.5	.42	.06	0	1.0	492	22	48	8.0	12	9.2
28	3.2	1.2	.44	.06	0	.80	770	19	42	7.0	10	10
29	3.2	1.3	.46	.04	---	.70	716	18	39	6.0	9.0	11
30	3.4	.89	.48	.04	---	.60	464	17	37	5.0	8.5	9.4
31	3.9	---	.46	.04	---	.50	---	16	---	5.5	8.0	---
TOTAL	92.6	84.49	15.31	6.36	.10	231.60	7565.40	1633	2653	616.5	257.0	297.4
MEAN	2.99	2.82	.49	.21	.004	7.47	252	52.7	88.4	19.9	8.29	9.91
MAX	3.9	5.3	.66	.48	.03	50	770	282	307	80	14	25
MIN	2.6	.89	.36	.04	0	0	.40	16	12	5.0	2.5	3.0
AC-FT	184	168	30	13	.2	459	15010	3240	5260	1220	510	590

CAL YR 1974 TOTAL 5218.93 MEAN 14.3 MAX 280 MIN 0 AC-FT 10350
WTR YR 1975 TOTAL 13452.76 MEAN 36.9 MAX 770 MIN 0 AC-FT 26680

PEAK DISCHARGE (BASE, 150 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-22	0030	6.30	860	6-15	1700	4.50	188
4-26	0645	6.75	1,220	6-20	0800	5.20	358
4-28	1530	6.55	1,070				

LITTLE MISSOURI RIVER BASIN

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06334500 LITTLE MISSOURI RIVER AT CAMP CROOK, S. DAK.

LOCATION.--Lat 45°32'49", long 103°58'23", in SW¼ sec.2, T.18 N., R.1 E., Harding County, on left bank 15 ft (5 m) upstream from bridge on State Highway 20 at east edge of Camp Crook.

DRAINAGE AREA.--1,970 mi² (5,100 km²), approximately.

PERIOD OF RECORD.--September 1903 to November 1906, May 1956 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,110.98 ft (948.227 m) above mean sea level. Prior to Nov. 30, 1906, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum. May 1956 to Oct. 8, 1957, nonrecording gage at site 15 ft (5 m) downstream at present datum.

AVERAGE DISCHARGE.--22 years, 137 ft³/s (3.880 m³/s), 99,260 acre-ft/yr (122 hm³/yr); median of yearly mean discharges, 120 ft³/s (3.40 m³/s), 86,900 acre-ft/yr (110 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 8,460 ft³/s (240 m³/s) May 7, gage height, 13.98 ft (4.261 m), maximum gage height, 14.43 ft (4.398 m) Mar. 20 (backwater from ice); minimum daily discharge, 0.25 ft³/s (0.007 m³/s) Jan. 11.

Period of record: Maximum discharge, 8,460 ft³/s (240 m³/s) May 7, 1975, gage height, 13.98 ft (4.261 m); maximum gage height, 14.43 ft (4.398 m) Mar. 20, 1975 (backwater from ice); no flow at times. Flood of 1952 reached a stage of about 16 ft (4.9 m), from information by local residents.

REMARKS.--Records good except those for winter periods, which are poor. Small diversions above station for irrigation.

REVISIONS (WATER YEARS).--WSP 1309: 1904. WSP 1729: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	17	2.0	2.0	1.4	1.8	175	432	194	800	12	4.9
2	1.7	7.1	3.3	1.8	1.4	1.8	200	569	176	750	11	4.7
3	1.7	5.6	3.0	1.9	1.4	1.8	225	659	140	600	9.4	4.8
4	1.7	12	3.0	1.9	1.2	2.0	250	734	120	400	10	4.8
5	1.8	26	3.0	1.9	1.0	2.0	256	747	100	150	9.6	4.7
6	1.8	18	3.3	1.9	1.0	2.0	333	2080	90	80	9.3	4.9
7	1.7	13	3.0	1.9	1.0	1.5	653	7600	85	55	11	4.5
8	1.7	9.3	3.5	1.0	.80	1.0	861	4780	100	60	9.3	4.5
9	1.7	6.7	4.0	.50	.50	1.0	864	2680	150	50	7.3	4.5
10	1.7	6.0	4.0	.30	.60	1.0	1130	2150	200	42	9.0	4.4
11	1.6	4.9	3.5	.25	1.0	1.0	929	2010	150	37	8.1	3.7
12	1.6	4.4	3.0	.30	1.0	1.0	842	1740	100	33	8.0	4.0
13	1.7	4.0	2.5	1.0	1.0	1.2	727	1310	130	34	8.2	4.0
14	1.8	4.0	2.7	1.5	1.0	2.0	655	1050	120	31	6.4	4.1
15	1.7	4.0	2.0	1.3	1.0	5.0	692	836	100	31	7.7	3.8
16	1.7	4.5	2.2	1.0	1.0	20	525	544	90	34	7.6	3.5
17	1.7	4.7	2.3	1.5	1.0	50	458	363	85	30	6.9	3.9
18	1.7	4.3	2.3	1.5	1.2	60	517	280	150	26	6.7	4.5
19	2.3	4.4	2.3	1.3	1.5	100	756	223	130	22	5.7	4.6
20	8.5	3.7	2.0	1.5	1.5	200	688	193	110	20	8.7	4.5
21	2.9	4.2	2.0	1.5	1.5	300	779	189	100	19	8.4	4.4
22	2.3	4.0	2.0	1.7	1.3	250	745	217	90	17	8.3	3.9
23	2.0	3.6	1.8	1.8	1.5	250	509	497	90	16	8.4	4.3
24	2.3	3.6	1.5	2.0	2.5	200	452	1200	80	16	8.3	4.0
25	2.6	3.5	1.7	1.8	2.0	180	454	1130	300	14	7.9	3.9
26	2.3	3.5	2.0	1.6	1.8	150	404	966	500	10	8.2	4.7
27	2.3	3.0	1.8	1.5	2.0	125	367	687	800	11	7.7	4.5
28	2.3	2.5	2.0	1.5	2.0	100	355	391	800	10	7.5	4.6
29	2.3	2.0	2.0	1.5	---	100	334	276	1000	13	6.7	4.5
30	2.9	2.0	2.0	1.4	---	120	307	228	1100	18	6.4	3.7
31	20	---	2.2	1.4	---	140	---	201	---	15	7.0	---
TOTAL	85.6	195.5	77.9	43.95	36.10	2371.1	16442	36962	7380	3444	256.7	129.8
MEAN	2.76	6.52	2.51	1.42	1.29	76.5	548	1192	246	111	8.28	4.33
MAX	20	26	4.0	2.0	2.5	300	1130	7600	1100	800	12	4.9
MIN	1.6	2.0	1.5	.25	.50	1.0	175	189	80	10	5.7	3.5
AC-FT	170	388	155	87	72	4700	32610	73310	14640	6830	509	257
CAL YR 1974	TOTAL	15022.95	MEAN	41.2	MAX	872	MIN	.75	AC-FT	29800		
WTR YR 1975	TOTAL	67424.65	MEAN	185	MAX	7600	MIN	.25	AC-FT	133700		

PEAK DISCHARGE (BASE, 1,000 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-10	0615	5.16	1,230	5-24	1600	5.53	1,370
5-7	1200	13.98	8,460	6-30	--	--	1,500

LITTLE MISSOURI RIVER BASIN

06335000 LITTLE BEAVER CREEK NEAR MARMARTH, N. DAK.

LOCATION.--Lat 46°16'29", long 103°58'33", in NE¼ sec.7, T.132 N., R.106 W., Bowman County, on right bank 150 ft (46 m) downstream from concreted ford, 0.8 mi (1.3 km) downstream from Corral Creek, 3 mi (5 km) southwest of Marmarth, and 5 mi (8 km) upstream from mouth.

DRAINAGE AREA.--587 mi² (1,520 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 2,733.14 ft (833.061 m) above mean sea level. June 28, 1951 to May 17, 1968, water-stage recorder 300 ft (90 m) upstream at datum 10.00 ft (3.048 m) higher. See WSP 1729 or 1917 for history of changes prior to June 28, 1951.

AVERAGE DISCHARGE.--37 years, 43.9 ft³/s (1.243 m³/s), 31,810 acre-ft/yr (39.2 hm³/yr), median of yearly mean discharges, 31 ft³/s (0.88 m³/s), 22,500 acre-ft/yr (28 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,710 ft³/s (76.7 m³/s) May 10, gage height, 17.40 ft (5.304 m); minimum daily, 0.54 ft³/s (0.015 m³/s) Oct. 17.

Period of record: Maximum discharge, 12,700 ft³/s (360 m³/s) Apr. 6, 1952, gage height, 13.9 ft (4.24 m), from floodmark, site and datum then in use, from rating curve extended above 4,500 ft³/s (127 m³/s) on basis of slope-area measurement of peak flow; no flow at times in most years.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1279: 1939(M), 1940, 1943-44(M), 1945, 1948.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.69	7.6	3.8	2.1	1.6	20	54	168	38	56	9.8	2.1
2	.86	4.2	3.8	2.1	1.6	20	55	126	36	42	8.3	1.8
3	.77	4.9	3.8	2.1	1.6	20	54	99	37	35	7.0	1.8
4	.69	4.9	3.8	2.1	1.6	15	51	78	37	31	6.4	1.5
5	.77	4.4	3.8	2.0	1.6	15	51	63	33	27	6.1	1.6
6	.86	5.2	3.8	2.0	1.6	15	73	205	29	24	6.1	1.9
7	.86	5.2	3.8	1.9	1.6	15	131	866	28	23	5.8	2.1
8	.95	5.8	3.8	1.9	1.6	10	194	801	27	21	5.5	2.1
9	.69	6.1	3.8	1.9	1.6	8.3	328	515	29	20	5.2	2.3
10	.77	6.4	3.8	1.5	1.6	8.8	300	1350	32	18	4.4	2.7
11	.77	6.4	3.9	1.2	1.6	7.8	231	1300	34	17	4.9	2.8
12	.61	6.7	3.9	1.0	1.6	7.3	235	416	24	15	4.9	2.3
13	.77	6.9	3.9	1.0	1.6	6.4	454	179	22	14	4.0	2.1
14	.77	7.0	3.9	1.2	1.6	6.4	392	132	72	13	4.9	2.7
15	.86	5.8	3.6	1.2	1.6	7.8	300	108	57	12	5.5	3.4
16	.86	5.8	3.8	1.2	1.6	4.8	181	83	31	12	5.5	4.4
17	.54	4.9	3.6	1.2	1.6	6.4	180	74	27	12	6.1	4.2
18	.69	4.9	3.6	1.2	1.6	6.6	139	63	27	14	6.1	3.6
19	1.3	4.6	3.6	1.2	1.6	92	140	56	172	24	6.4	3.8
20	1.0	4.6	3.4	1.2	1.6	107	148	55	77	14	6.1	3.6
21	1.1	4.6	3.4	1.3	1.6	70	141	55	64	30	6.4	3.4
22	1.0	4.6	3.4	1.3	1.6	46	131	89	74	20	5.8	3.4
23	1.3	4.6	3.2	1.3	1.6	35	100	102	94	14	4.6	3.1
24	1.7	4.4	2.8	1.4	2.0	40	103	78	82	12	3.4	3.2
25	1.9	4.4	2.5	1.4	3.0	40	94	77	41	11	2.9	3.2
26	1.0	4.2	2.5	1.4	3.0	43	80	61	813	11	2.8	4.2
27	1.0	4.2	2.4	1.4	10	33	70	50	161	10	3.4	3.8
28	2.5	4.2	2.4	1.4	20	26	112	43	144	9.3	3.2	3.4
29	1.3	4.2	2.3	1.5	---	43	484	39	101	8.3	2.8	3.6
30	2.1	4.0	2.3	1.6	---	46	191	36	75	7.3	4.0	3.4
31	4.4	---	2.1	1.6	---	48	---	35	---	8.8	2.0	---
TOTAL	35.38	155.7	104.5	46.8	74.8	1029.8	5197	7402	2518	585.7	160.3	87.5
MEAN	1.14	5.19	3.37	1.51	2.67	33.2	173	239	83.9	18.9	5.17	2.92
MAX	4.4	7.6	3.9	2.1	20	107	484	1350	813	56	9.8	4.4
MIN	.54	4.0	2.1	1.0	1.6	6.4	51	35	22	7.3	2.0	1.5
AC-FT	70	309	207	93	148	2040	10310	14680	4990	1160	318	174
CAL YR 1974	TOTAL	8900.56	MEAN	24.4	MAX	2590	MIN	.28	AC-FT	17650		
WTR YR 1975	TOTAL	17397.48	MEAN	47.7	MAX	1350	MIN	.54	AC-FT	34510		

PEAK DISCHARGE (BASE, 2,000 FT³/S).--May 10 (2100) 2,710 FT³/S (17.40 FT).

06335500 LITTLE MISSOURI RIVER AT MARMARTH, N. DAK.

LOCATION.--Lat 46°17'44", long 103°55'06", in SW¼ sec.30, T.133 N., R.105 W., Slope County, on left bank 90 ft (27 m) downstream from bridge on U.S. Highway 12 in Marmarth and 1.5 mi (2.4 km) downstream from Little Beaver Creek.

DRAINAGE AREA.--4,640 mi² (12,020 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 2,686.32 ft (818.790 m) above mean sea level. Prior to June 23, 1950, various nonrecording gages on former highway bridge at present site and datum. June 23, 1950, to Sept. 2, 1957, nonrecording gage at site 90 ft (27 m) upstream at present datum.

AVERAGE DISCHARGE.--37 years, 341 ft³/s (9.657 m³/s), 247,100 acre-ft/yr (305 hm³/yr); median of yearly mean discharges, 280 ft³/s (7.93 m³/s), 203,000 acre-ft/yr (250 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 26,600 ft³/s (753 m³/s) May 8, gage height, 16.75 ft (5.105 m); minimum daily, 0.50 ft³/s (0.014 m³/s) Feb. 6-19.

Period of record: Maximum discharge, 45,000 ft³/s (1,270 m³/s) Mar. 23, 1947, gage height, 21.7 ft (6.61 m); maximum gage height, 23.4 ft (7.13 m) Mar. 31, 1952, backwater from ice; no flow for part of most years.

According to local residents, the greatest known flood prior to 1953 occurred in June 1907 (stage unknown). Other major floods occurred in March 1913, May 1929, and March 1920 and reached stages of about 21.5 ft (6.55 m), 20.2 ft (6.16 m), and 19.7 ft (6.00 m), respectively. These stages are not comparable to stages during period of record, owing to construction of levees.

REMARKS.--Records fair. Small diversions for irrigation above station. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 896: 1938-39. WSP 1086: 1943-44. WSP 1279: 1943(M), 1945-46, 1948. WSP 1439: 1950 (calendar year figures).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	124	9.0	4.5	1.5	16	770	1000	448	1380	31	13
2	4.6	117	8.0	4.5	1.0	20	800	1010	404	1350	30	12
3	5.4	68	8.0	4.5	1.0	20	950	1220	388	989	31	12
4	13	42	7.5	4.5	1.0	20	1230	1430	349	690	31	11
5	9.6	39	7.5	4.5	.67	20	1830	1510	292	456	30	11
6	8.2	28	7.0	4.5	.50	20	2590	1870	254	330	28	10
7	8.2	23	7.0	4.5	.50	20	4000	3700	229	260	27	11
8	8.9	18	7.0	4.5	.50	22	5820	22500	224	212	26	11
9	8.9	17	6.0	4.0	.50	24	6720	17800	387	270	23	10
10	8.2	24	6.0	4.0	.50	25	3110	15100	545	179	22	9.5
11	8.9	19	6.0	3.0	.50	26	2480	13000	346	134	21	8.9
12	10	19	6.0	1.0	.50	27	2150	7670	238	111	20	9.4
13	9.6	19	6.0	1.0	.50	28	1990	5750	201	95	21	9.6
14	8.9	21	6.0	1.0	.50	30	1650	3330	285	83	23	10
15	9.6	27	6.0	1.0	.50	35	1920	2750	283	74	23	10
16	8.2	27	5.5	1.0	.50	48	1760	2040	191	72	41	11
17	8.9	28	5.5	1.5	.50	180	1730	1390	173	68	41	11
18	8.2	27	5.5	1.5	.50	770	1430	986	192	113	34	11
19	8.9	30	5.5	1.5	.50	600	1210	794	361	188	28	11
20	8.2	25	5.5	1.5	.60	470	1220	734	307	95	27	13
21	8.9	30	5.0	2.0	.60	620	1520	800	200	73	26	14
22	8.9	19	5.0	2.0	.60	1300	1360	788	186	65	27	15
23	9.6	14	5.0	2.5	.60	950	1200	1290	181	58	26	15
24	8.9	15	5.0	2.5	.60	890	1120	1540	166	53	23	15
25	10	25	5.0	2.5	1.0	1020	981	1940	128	46	20	14
26	11	21	4.5	2.5	5.0	700	812	2150	1030	42	19	14
27	11	25	4.5	2.5	10	600	782	1670	1010	41	18	15
28	11	14	4.5	2.0	13	550	830	1230	941	39	18	16
29	14	15	4.5	2.0	---	520	2280	893	2070	35	17	15
30	14	12	4.5	2.0	---	500	1290	653	2380	33	16	14
31	60	---	4.5	1.5	---	470	---	512	---	33	14	---
TOTAL	335.9	932	182.5	82.0	44.17	10541	57535	119050	14389	7667	782	362.4
MEAN	10.8	31.1	5.89	2.65	1.58	340	1918	3840	480	247	25.2	12.1
MAX	60	124	9.0	4.5	13	1300	6720	22500	2380	1380	41	16
MIN	4.2	12	4.5	1.0	.50	16	770	512	128	33	14	8.9
AC-FT	666	1850	362	163	88	20910	114100	236100	28540	15210	1550	719

CAL YR 1974 TOTAL 49462.70 MEAN 136 MAX 3130 MIN 3.0 AC-FT 98110
WTR YR 1975 TOTAL 211902.97 MEAN 581 MAX 22500 MIN .50 AC-FT 420300

PEAK DISCHARGE (BASE, 3,000 FT³/S).--Apr. 9 (1200) 7,060 FT³/S (8.77 FT); May 8 (1100) 26,600 FT³/S (16.75 FT).

LITTLE MISSOURI RIVER BASIN

06336000 LITTLE MISSOURI RIVER AT MEDORA, N. DAK.

LOCATION.--Lat 46°55'10", long 103°31'40", in NE¼ sec.27, T.140 N., R.102 W., Billings County, on left bank 600 ft (183 m) downstream from bridge on county highway and 1 mi (1.6 km) upstream from Andrews Creek and bridge on I-94.

DRAINAGE AREA.--6,190 mi² (16,030 km²), approximately.

PERIOD OF RECORD.--May 1903 to October 1908, October to November 1921, March to June and November to December 1922, May 1923 to September 1924, September 1928 to September 1934, October 1945 to September 1975 (discontinued). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder, and supplemental nonrecording gage on downstream side of highway bridge. Datum of gage is 2,246.75 ft (684.809 m) above mean sea level. Prior to Oct. 9, 1945, nonrecording gages at several sites within 0.2 mi (0.3 km) upstream from present site at various datums. Oct. 9, 1945, to Aug. 22, 1951, nonrecording gage at site 600 ft (183 m) upstream at same datum.

AVERAGE DISCHARGE.--42 years (1903-08, 1923-24, 1928-34, 1945-75), 472 ft³/s (13.37 m³/s) 342,000 acre-ft/yr (421.7 hm³/yr); median of yearly mean discharges, 416 ft³/s (11.8 m³/s) 301,000 acre-ft/yr (370 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 22,800 ft³/s (645.7 m³/s) May 9, gage height, 14.00 ft (4.267 m); minimum daily discharge, no flow, Jan. 11 to Feb. 22.
Period of record: Maximum discharge, 65,000 ft³/s (1,841 m³/s) Mar. 23, 1947, gage height, 20.5 ft (6.25 m); no flow at times.

REMARKS.--Records fair. Small diversions above station for irrigation. Records of chemical analyses for the 1975 water year are published in Section 2 of this report.

REVISIONS (WATER YEARS)--WSP 546: Drainage area. WSP 1279: 1903-7, 1923-24, 1930-31, 1934(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	62	20	.50	0	1.0	500	2160	800	2610	58	23
2	2.3	86	15	.50	0	1.0	400	1520	692	2200	70	17
3	2.3	143	15	.50	0	1.0	300	1220	602	1540	68	17
4	4.7	129	15	.50	0	1.0	200	1170	542	1440	58	17
5	8.8	150	10	.50	0	1.0	146	1300	500	1090	50	16
6	23	111	10	.50	0	1.0	108	1520	478	871	42	17
7	17	84	9.5	.50	0	.50	86	3340	445	716	30	19
8	21	77	9.0	.50	0	.50	111	4330	405	530	36	16
9	39	68	8.0	.50	0	.50	275	14500	554	467	35	16
10	29	60	7.0	.50	0	.50	1230	19000	959	405	38	13
11	23	52	6.0	0	0	.50	3400	16600	919	335	29	13
12	17	49	5.0	0	0	.50	2500	14100	839	335	24	13
13	17	52	4.0	0	0	1.0	2620	7810	644	265	29	13
14	16	44	4.0	0	0	1.0	2710	6330	530	200	30	13
15	15	40	3.5	0	0	1.0	4320	4560	451	160	30	13
16	15	40	3.5	0	0	52	4470	3560	456	150	29	13
17	13	40	3.0	0	0	110	2660	2840	524	132	35	13
18	13	35	3.0	0	0	89	2560	2190	484	125	36	19
19	13	30	2.5	0	0	146	2220	1700	500	99	21	19
20	13	30	2.5	0	0	785	1940	1370	951	164	35	15
21	14	35	2.5	0	0	650	2040	1050	847	200	30	17
22	13	35	2.5	0	0	484	2190	927	650	205	49	17
23	13	35	2.5	0	1.0	410	2270	1020	500	164	46	15
24	12	30	2.0	0	2.0	686	1720	1070	425	125	33	13
25	12	27	1.5	0	1.5	1020	1540	1440	375	96	30	15
26	12	25	1.0	0	1.5	991	1450	1720	500	84	30	13
27	13	25	1.0	0	1.5	1090	1410	2160	1220	79	30	19
28	15	25	1.0	0	1.5	793	1400	1970	1510	66	29	19
29	15	20	1.0	0	---	578	2010	1640	1150	62	29	19
30	16	20	1.0	0	---	614	2800	1270	1030	56	26	17
31	29	---	1.0	0	---	600	---	999	---	56	24	---
TOTAL	468.4	1659	172.5	5.00	9.0	9110.00	51586	126386	20482	15027	1139	479
MEAN	15.1	55.3	5.56	.16	.32	294	1720	4077	683	485	36.7	16.0
MAX	39	150	20	.50	2.0	1090	4470	19000	1510	2610	70	23
MIN	2.3	20	1.0	0	0	.50	86	927	375	56	21	13
AC-FT	929	3290	342	9.9	18	18070	102300	250700	40630	29810	2260	950
CAL YR 1974 TOTAL	69737.10			MEAN 191	MAX 4600	MIN 1.0	AC-FT 138300					
WTR YR 1975 TOTAL	226522.90			MEAN 621	MAX 19000	MIN 0	AC-FT 449300					

PEAK DISCHARGE, (BASE, 4,000 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-16	0300	8.37	7,250	5-9	2100	14.00	22,800
5-7	2000	8.20	7,040				

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, N. DAK.

LOCATION.--Lat 47°35'25", long 103°15'05", in NW¼SE¼SE¼ sec.35, T.148 N., R.99 W., McKenzie County, at bridge on U.S. Highway 85, 17 mi (27 km) upstream from Cherry Creek, and 17.5 mi (28.2 km) south of Watford City.

DRAINAGE AREA.--8,310 mi² (21,520 km²), approximately.

PERIOD OF RECORD.--October 1934 to current year.

GAGE.--Water-stage recorder and supplemental nonrecording gage. Datum of gage is 1,929.03 ft (587.968 m) above mean sea level. Oct. 2, 1959, to June 17, 1963, water-stage recorder at present site and datum. June 18, 1963, to Nov. 28, 1964, at site 700 ft (210 m) upstream at present datum. See WSP 1729 or 1917 for history of changes prior to Oct. 2, 1959.

AVERAGE DISCHARGE.--41 years, 605 ft³/s (17.13 m³/s), 438,300 acre-ft/yr (540 hm³/yr); median of yearly mean discharges, 474 ft³/s (13.4 m³/s), 343,400 acre-ft/yr (420 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 17,500 ft³/s (496 m³/s) May 11, gage height, 8.40 ft (2.560 m); no flow Jan. 12 to Feb. 19.

Period of record: Maximum discharge, 110,000 ft³/s (3,120 m³/s) Mar. 25, 1947, gage height, 24.0 ft (7.32 m) from floodmark, site then in use; no flow at times in most years.

REMARKS.--Records fair. Records of chemical analyses and suspended sediment loads for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 926: 1935. WSP 1270: 1943.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	63	18	3.0	0	9.0	1200	3480	1300	1430	113	58
2	12	69	16	3.0	0	7.0	1020	3620	1030	2320	105	58
3	12	37	14	3.0	0	7.0	1000	2190	884	3140	100	60
4	11	35	12	3.0	0	10	1050	1780	659	2120	93	58
5	11	72	10	3.0	0	20	950	1360	634	1670	93	50
6	11	77	9.0	3.0	0	10	900	1210	578	1470	93	31
7	11	117	8.0	3.0	0	10	900	2070	554	1430	93	28
8	11	125	7.0	3.0	0	9.0	1000	3760	769	990	250	27
9	10	110	6.0	2.5	0	8.0	1100	5550	3580	912	230	22
10	10	100	5.0	2.0	0	7.0	1400	12400	3240	642	106	27
11	11	87	4.5	1.0	0	6.0	1250	16600	1800	546	77	24
12	12	70	4.5	0	0	5.0	1600	14700	1140	490	74	21
13	15	45	4.0	0	0	5.0	2000	12600	830	408	69	21
14	23	50	4.0	0	0	10	4400	7460	848	349	89	21
15	23	45	4.0	0	0	30	6100	7100	940	344	160	20
16	18	40	4.0	0	0	50	8200	6050	695	294	93	18
17	16	40	3.5	0	0	150	7900	4950	546	288	74	20
18	16	40	3.5	0	0	160	6950	3700	455	272	74	37
19	15	35	3.5	0	0	200	6400	2880	570	240	80	137
20	12	30	3.5	0	1.0	300	6100	2300	650	225	77	100
21	12	30	3.5	0	3.0	500	6120	1880	618	195	74	69
22	12	30	3.5	0	5.0	1740	7220	1390	803	182	77	58
23	12	25	3.5	0	4.0	2500	6150	1180	930	195	74	46
24	12	25	3.5	0	5.0	2300	4220	1020	695	235	66	35
25	12	25	3.0	0	10	2000	3100	1040	562	250	74	28
26	13	20	3.0	0	20	1800	6800	1170	658	205	83	23
27	16	20	3.0	0	10	1400	4140	1660	1270	172	83	24
28	16	25	3.0	0	10	1000	6000	2100	749	154	77	31
29	16	25	3.0	0	---	500	7570	2390	1560	142	66	33
30	17	20	3.0	0	---	400	4220	2080	2070	133	63	28
31	24	---	3.0	0	---	600	---	1680	---	125	60	---
TOTAL	435	1532	179.0	29.5	68.0	15753.0	116960	133350	31617	21568	2940	1213
MEAN	14.0	51.1	5.77	.95	2.43	508	3899	4302	1054	696	94.8	40.4
MAX	24	125	18	3.0	20	2500	8200	16600	3580	3140	250	137
MIN	10	20	3.0	0	0	5.0	900	1020	455	125	60	18
AC-FT	863	3040	355	59	135	31250	232000	264500	62710	42780	5830	2410
CAL YR 1974	TOTAL	108470.0	MEAN	297	MAX	4770	MIN	3.0	AC-FT	215200		
WTR YR 1975	TOTAL	325644.5	MEAN	892	MAX	16600	MIN	0	AC-FT	645900		

PEAK DISCHARGE (BASE, 8,000 FT²/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-16	--	--	9,600	4-29	0430	6.35	8,950
4-26	1700	5.85	8,200	5-11	0400	8.40	17,500

MISSOURI RIVER MAIN STEM

06338000 LAKE SAKAKAWEA NEAR RIVERDALE, N. DAK.

LOCATION.--Lat 47°30'10", long 101°25'50", in S½ sec.31, T.147 N., R.84 W., Mercer County, in control structure of Garrison Dam, 2.5 mi (4.0 km) west of Riverdale and 14 mi (23 km) upstream from Knife River at mile 1,389.9 (kilometre 2,236.3).

DRAINAGE AREA.--181,400 mi² (469,800 km²), approximately.

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1966, published as Garrison Reservoir near Riverdale.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level.

EXTREMES.--Current year: Maximum contents, 24,368,000 acre-ft (30.0 km³) July 25, elevation, 1,854.6 ft (565.28 m); minimum, 18,669,000 acre-ft (23.0 km³) Mar. 21, elevation, 1,838.5 ft (560.37 m).
Period of record: Maximum contents, 24,368,000 acre-ft (30.0 km³) July 25, 1975, elevation, 1,854.6 ft (565.28 m); minimum since first reaching spillway level, 12,527,000 acre-ft (15.4 km³) March 17, 1963, elevation, 1,816.4 ft (553.64 m).

REMARKS.--Reservoir is formed by earth-fill dam; storage began in November 1953. Maximum capacity, 24,200,000 acre-ft (29.8 km³) below elevation 1,854.0 ft (565.10 m), top of 29-ft (8.84 m) gates. Normal maximum, 22,700,000 acre-ft (28.0 km³) below elevation 1,850.0 ft (563.88 m), of which about 4,300,000 acre-ft (5.30 km³) is designated for flood control. Elevation of crest of spillway, 1,825.0 ft (556.26 m), surmounted by radial gates. Inactive storage, 5,000,000 acre-ft (6.16 km³) below elevation 1,775.0 ft (541.02 m). Dead storage, zero at elevation 1,672.0 ft (509.63 m). Snake Creek arm of the reservoir has connecting gate to main reservoir, with sill at elevation, 1,810 ft (551.69 m). Figures herein represent total contents.

COOPERATION.--Elevation and contents furnished by Corps of Engineers from capacity table dated July 1971. Elevations are those observed; contents are adjusted for wind effect.

REVISIONS (WATER YEARS).--WSP 1559: 1957(M).

MONTHEND ELEVATION AND CONTENTS, AT 2400, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30-----	1,847.1	21,576,000	--
Oct. 31-----	1,845.1	20,849,000	-727,000
Nov. 30-----	1,844.0	20,520,000	-329,000
Dec. 31-----	1,842.3	19,918,000	-602,000
CAL YR 1974-----	--	--	-4,000
Jan. 31-----	1,841.0	19,502,000	-416,000
Feb. 28-----	1,839.0	18,828,000	-674,000
Mar. 31-----	1,838.7	18,731,000	-97,000
Apr. 30-----	1,842.7	20,042,000	+1,311,000
May 31-----	1,846.2	21,289,000	+1,247,000
June 30-----	1,851.3	22,969,000	+1,680,000
July 31-----	1,854.8	24,322,000	+1,353,000
Aug. 31-----	1,851.2	23,042,000	-1,280,000
Sept. 30-----	1,848.2	21,992,000	-1,050,000
WTR YR 1975-----	--	--	+416,000

LOCATION.--Lat 47°30'08", long 101°25'50", in S½ sec.31, T.147 N., R.84 W., Mercer County, in control structure of Garrison Dam, 2.5 mi (4.0 km) west of Riverdale and 14 mi (23 km) upstream from Knife River at mile 1.389.9 (kilometre 2.236.3).

DRAINAGE AREA.--181,400 mi² (469,800 km²), approximately.

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Flow meter and gate readings.

AVERAGE DISCHARGE.--6 years, 26,930 ft³/s (763 m³/s), 19,510,000 acre-ft/yr (24.1 km³/yr).

EXTREMES.--Current year: Maximum daily discharge, 65,200 ft³/s (1,850 m³/s) July 25; minimum daily discharge, 12,100 ft³/s (343 m³/s) Apr. 24.
Period of record: Maximum daily discharge, 65,200 ft³/s (1,850 m³/s) July 25, 1975; minimum daily discharge, 6,000 ft³/s (170 m³/s) Sept. 29, 1974.

REMARKS.--Records good. Many diversions above station. Flow regulated by Lake Sakakawea. (See station 06338000.) Prior to October 1969 records were obtained at a site 9.1 mi (14.6 km) downstream. Discharges at the downstream site were generally about 7 percent greater than those furnished by the Corps of Engineers for the present site. Records of chemical analyses and suspended sediment discharge for the water year 1975 are published in Section 2 of this report.

COOPERATION.--Records furnished by the Corps of Engineers.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20700	26300	22400	21500	26900	28100	18300	24000	35900	50100	65100	37400
2	19300	26300	26300	24300	26800	25700	19400	24100	36100	50000	64900	37400
3	28000	26200	26900	24600	28300	25400	19500	18900	35600	49900	64900	37300
4	27900	25300	26500	20000	28300	19500	18100	19500	37600	50100	64900	37100
5	26200	26100	24700	19900	29200	19900	18000	24300	38600	49900	65100	36800
6	24700	25500	25900	21700	29800	19600	18200	24400	38500	55100	64900	37300
7	26900	25300	25900	24400	29300	25800	18100	26800	38500	59900	65000	36800
8	25900	25400	25100	20200	31100	25700	18200	29900	38500	60000	64900	37500
9	26500	22400	26500	20400	30900	25200	18100	34200	38500	60000	65000	36500
10	26100	21200	25800	19900	30500	26900	18100	34500	38200	65000	65100	37500
11	26200	23700	25300	19700	31600	26800	18000	33300	38200	64900	65100	37500
12	26900	25500	26200	20300	28500	28800	17900	30800	38000	65100	64900	37500
13	30400	23300	26600	20500	27900	28800	17700	28100	37900	64900	65000	37500
14	30300	26200	25700	20600	28600	28500	17900	28500	37900	64900	65000	37700
15	30300	26200	22500	19400	26900	27500	14800	28500	37900	65000	65000	37700
16	30600	23700	26600	19800	25900	25500	14800	32100	37900	65100	65000	37700
17	30300	21100	26800	19400	27300	28700	15800	36300	37600	65100	65000	37800
18	30200	24200	25100	19400	27000	28000	19200	36300	37600	65100	65100	37400
19	30200	24200	26100	20400	28800	28000	22100	36800	37600	65100	59900	35100
20	30300	24600	24400	20800	28100	28000	15600	36600	37300	65100	54900	34900
21	29300	24100	24300	21400	28700	28200	16700	36400	37300	65000	50000	36100
22	30600	24500	20700	21900	26700	26000	16900	36500	37300	65000	45000	36800
23	30000	24100	24200	22900	27700	24800	16000	36500	37200	64900	40000	37600
24	30600	20000	22700	23500	28100	27200	12100	36300	41900	64900	37300	37800
25	30300	25200	20300	24300	28100	26900	16100	36200	46100	65200	35200	37900
26	30500	22900	23900	24500	28200	20000	14100	35900	50000	65000	31700	37100
27	29700	24400	22500	24900	28100	19700	13300	36400	50000	65100	27100	37800
28	30400	21600	20900	25400	28100	21900	16900	37000	50000	65100	31300	37700
29	30400	25600	18600	25500	---	19800	21000	36000	50000	65100	27300	37900
30	30500	23900	24300	26500	---	18400	24200	36400	50000	65100	30800	37900
31	30600	---	22700	26400	---	17900	---	36300	---	65100	37500	---
TOTAL	880800	729000	756400	684400	795400	771200	525100	987800	1203700	1915800	1677900	1117000
MEAN	28410	24300	24400	22080	28410	24880	17500	31860	40120	61800	54130	37230
MAX	30600	26300	26900	26500	31600	28800	24200	37000	50000	65200	65100	37900
MIN	19300	20000	18600	19400	25900	17900	12100	18900	35600	49900	27100	34900
AC-FT	1747000	1446000	1500000	1358000	1578000	1530000	1042000	1959000	2388000	3800000	3328000	2216000
CLT YR 1974	TOTAL	8971800	MEAN	24580	MAX	30600	MIN	6000	AC-FT	17800000		
WTR YR 1975	TOTAL	12044500	MEAN	33000	MAX	65200	MIN	12100	AC-FT	23890000		

MISSOURI RIVER MAIN STEM

06339000 MISSOURI RIVER BELOW GARRISON DAM, N. DAK.

LOCATION.--Lat 47°23'08", long 101°23'36", in NE&NN&NW& sec.16, T.14S N., R.84 W., Mercer County, on right bank 4.3 mi (6.9 km) north of Stanton, 5.1 mi (8.2 km) upstream from Knife River, 9.1 mi (14.6 km) downstream from Garrison Dam at mile 1,380.8 (kilometre 2,221.7).

DRAINAGE AREA.--181,400 mi² (469,800 km²), approximately.

PERIOD OF RECORD.--October 1969 to current year. Operated as a stage-discharge station April 1948 to September 1969.

GAGE.--Water-stage recorder. Datum of gage is at 1,600.00 ft (487.680 m) above mean sea level.

EXTREMES.--Period of record: Maximum daily gage height recorded, 76.89 ft (23.436 m) Feb. 8, 11, 1975; minimum daily recorded, 68.06 ft (20.745 m) Mar. 24, 1970.

REMARKS.--Stage regulated by Lake Sakakawea. (See station 06338000.) Gage height record not published April 1948 to September 1969.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70.12	71.30	70.40	68.56	75.95	75.09	69.58	70.89	72.64	74.59	76.22	
2	69.64	70.98	70.73	69.23	75.97	74.70	69.65	70.93	72.68	74.53	76.26	
3	71.44	71.08	71.26	69.44	76.00	74.49	69.94	69.95	72.60	74.54	76.26	
4	71.46	71.23	71.06	69.25	76.49	73.33	69.45	69.74	72.83	74.57	76.25	
5	71.20	70.87	70.75	68.28	76.46	72.99	69.49	70.66	73.06	74.54	76.27	
6	70.82	70.96	69.75	68.45	76.54	72.77	69.64	70.68	73.06	75.07	76.31	
7	71.28	70.97	70.33	68.52	76.47	73.66	69.52	70.87	73.08	75.68	76.30	
8	71.05	70.90	69.33	68.79	76.89	73.94	69.57	71.69	73.08	75.80	76.28	
9	71.19	70.58	70.18	68.54	76.87	73.91	69.44	72.44	73.08	75.81	76.28	
10	71.13	69.78	69.54	69.15	76.75	73.97	69.45	72.43	73.01	76.26	76.31	
11	71.10	70.45	69.56	70.95	76.89	74.54	69.36	72.29	73.02	76.35	76.31	
12	71.32	70.92	69.54	74.32	76.47	74.63	69.41	72.06	73.02	76.37	76.29	
13	71.70	70.93	69.77	75.10	76.13	74.12	69.25	71.44	72.97	76.36	76.31	
14	71.80	70.51	69.56	75.55	76.38	73.69	69.45	71.47	72.98	76.37	76.30	
15	71.83	71.12	69.13	75.09	75.85	73.11	68.94	71.49	72.98	76.36	76.33	
16	71.93	70.78	69.48	74.68	75.73	72.18	68.54	71.89	72.97	76.37	76.32	
17	71.88	69.81	70.42	74.91	75.74	72.12	68.85	72.71	72.94	76.31	76.30	
18	71.77	70.67	69.74	74.40	75.73	71.85	69.56	72.75	72.93	76.30	76.35	
19	71.84	70.57	69.32	74.94	75.82	71.57	70.11	72.77	72.95	76.25	75.83	
20	71.81	70.71	69.79	74.98	75.65	71.50	69.20	72.86	72.93	76.29	75.23	
21	71.80	70.70	69.63	74.91	75.82	71.46	69.40	72.67	72.90	76.30	74.66	
22	71.66	70.62	68.74	75.18	75.29	71.13	69.49	72.77	72.90	76.26	74.08	
23	71.78	70.65	69.15	75.23	75.51	70.98	69.32	72.75	72.90	76.21	73.43	
24	71.93	70.36	69.29	75.30	75.41	71.17	68.54	72.72	73.43	76.25	73.02	
25	71.84	70.36	68.48	75.78	75.54	71.31	68.98	72.67	74.02	76.26	72.65	
26	71.99	70.43	68.95	75.99	75.16	70.46	69.01	72.63	74.53	76.22	72.14	
27	71.64	70.48	69.27	75.91	75.25	69.89	68.59	72.70	74.64	76.22	71.35	
28	71.83	70.27	68.70	75.93	75.27	70.09	69.17	72.80	74.57	76.25	72.27	
29	71.83	70.72	68.19	75.95	---	70.10	69.86	72.67	74.66	76.23	---	
30	71.84	70.72	68.84	75.91	---	69.73	71.08	72.72	74.61	76.27	---	
31	71.90	---	68.95	76.27	---	69.61	---	72.70	---	76.25	---	
MEAN	71.50	70.68	69.61	73.08	76.00	72.39	69.39	71.99	73.27	75.92		
MAX	71.99	71.30	71.26	76.27	76.89	75.09	71.08	72.86	74.66	76.37		
MIN	69.64	69.78	68.19	68.28	75.16	69.61	68.54	69.74	72.60	74.53		

KNIFE RIVER BASIN

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06339100 KNIFE RIVER AT MANNING, N. DAK.

LOCATION.--Lat 47°14'10", long 102°46'10", in SE¼NW¼ sec.6, T.143 N., R.95 W., Dunn County, on left bank 50 ft (15 m) downstream from bridge on State Highway 22, 0.4 mi (0.6 km) north of Manning.

DRAINAGE AREA.--205 mi² (531 km²), approximately.

PERIOD OF RECORD.--July 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,156.55 ft (657.316 m) above mean sea level.

AVERAGE DISCHARGE.--8 years, 27.4 ft³/s (0.776 m³/s) 19,850 acre-ft/yr (24.5 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,990 ft³/s (56.4 m³/s) Apr. 22, gage height, 15.37 ft (4.685 m), minimum daily, 0.05 ft³/s (0.001 m³/s) Oct. 1.

Period of record: Maximum discharge 2,940 ft³/s (83.3 m³/s) June 15, 1970, gage height, 16.20 ft (4.938 m); no flow at times.

REMARKS.--Records good except those for the winter period, which are fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	2.7	1.2	.86	.52	1.4	4.0	119	7.8	3.2	1.3	1.1
2	.08	3.1	1.2	.91	.52	1.0	3.0	71	7.4	2.6	1.3	.96
3	.12	2.8	1.3	.91	.49	.73	2.5	51	7.4	1.10	1.2	.91
4	.16	2.3	1.3	.96	.49	.77	2.5	43	6.7	3.1	1.2	.91
5	.19	2.1	1.2	.86	.43	1.2	3.0	37	6.4	1.5	1.1	.91
6	.22	1.9	1.3	.81	.31	1.2	3.0	34	7.0	9.4	1.1	.91
7	.22	1.8	1.4	.86	.22	1.0	3.5	101	15	5.5	1.1	.96
8	.22	1.8	1.2	.81	.16	1.6	3.5	149	10	3.7	1.2	.96
9	.28	1.8	1.1	.81	.10	1.0	4.0	70	25	2.6	1.3	1.0
10	.31	1.8	1.2	.31	.10	.69	4.0	125	57	2.6	2.0	1.1
11	.37	1.7	1.2	.40	.10	.73	4.5	251	75	2.3	2.2	1.1
12	.46	1.7	1.1	.40	.10	1.0	4.5	110	67	1.9	1.7	.96
13	.46	1.8	1.2	.40	.10	.86	5.0	49	35	1.7	1.5	1.0
14	.58	1.8	1.2	.40	.10	.86	5.0	34	22	1.6	1.3	.91
15	.58	1.7	1.2	.40	.10	1.2	6.0	27	18	1.5	1.2	1.3
16	.61	1.7	1.1	.50	.20	2.6	23	23	20	1.5	1.2	1.5
17	.58	1.6	1.1	.50	.20	43	84	21	20	1.6	1.2	1.8
18	.58	1.6	1.1	.60	.20	115	765	18	15	1.5	1.0	1.4
19	.69	1.7	.96	.60	.30	83	1190	17	15	1.5	.96	1.5
20	.65	1.7	.91	.60	.40	72	1580	17	21	1.4	.96	1.6
21	.58	1.6	1.0	.50	.50	38	1660	17	22	1.3	.96	1.8
22	.65	1.5	.96	.50	.50	26	1790	16	28	1.3	.96	2.0
23	.65	1.5	1.0	.60	.60	20	1280	16	18	1.3	.91	2.1
24	.69	1.5	1.0	.70	.61	21	681	14	10	1.3	.91	2.2
25	.73	1.5	.86	.80	.61	12	390	12	6.4	1.2	1.2	1.8
26	.73	1.4	.96	.70	.65	6.0	605	12	5.3	1.2	1.2	1.3
27	1.0	1.3	.91	.60	.73	6.0	1070	11	5.0	1.2	1.2	1.2
28	1.3	1.4	.86	.60	.73	5.0	1160	11	4.5	1.3	1.2	1.4
29	1.1	1.3	.96	.60	---	5.0	1790	10	4.4	1.3	1.2	1.8
30	.96	1.3	.81	.60	---	5.0	421	10	3.9	1.3	1.1	1.6
31	1.3	---	.86	.55	---	5.0	---	9.4	---	1.4	1.1	---
TOTAL	17.10	53.4	33.65	19.65	10.07	479.84	14547.0	1505.4	565.2	239.6	37.96	39.99
MEAN	.55	1.78	1.09	.63	.36	15.5	485	48.6	18.8	7.73	1.22	1.33
MAX	1.3	3.1	1.4	.96	.73	115	1790	251	75	110	2.2	2.2
MIN	.05	1.3	.81	.31	.10	.69	2.5	9.4	3.9	1.2	.91	.91
AC-FT	34	106	67	39	20	952	28850	2990	1120	475	75	79

CAL YR 1974 TOTAL 3997.16 MEAN 11.0 MAX 722 MIN .05 AC-FT 7930
WTR YR 1975 TOTAL 17548.86 MEAN 48.1 MAX 1790 MIN .05 AC-FT 34810

PEAK DISCHARGE (BASE, 300 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-22	1500	15.37	1,990	4-29	0200	15.33	1,950
4-27	0600	14.77	1,500	5-11	0400	8.03	342

KNIFE RIVER BASIN

06339300 KNIFE RIVER AT MARSHALL, N. DAK.

LOCATION.--Lat 47°08'17", long 102°20'00", NW¼ sec.10, T.142 N., R.92 W., Dunn County, on right bank 250 ft (75 m) downstream from bridge on State Highway 8 in Marshall.

DRAINAGE AREA.--722 mi² (1,870 km²).

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--5 years, 87.6 ft³/s (2.481 m³/s) 63,470 acre-ft/yr (78.3 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 3,820 ft³/s (108 m³/s) Apr. 29, gage height, 15.71 ft (4.788 m); minimum daily, 0.50 ft³/s (0.014 m³/s) Feb. 5-14.

Period of record: Maximum discharge, 9,080 ft³/s (257 m³/s) Mar. 14, 1972, gage height, 19.37 ft (5.904 m); minimum, 0.18 ft³/s (0.005 m³/s) July 19, 20, 1973, gage height, 2.48 ft (0.756 m).

Flood of March 1943 reached a stage of at least 18.5 ft (5.639 m) prior to dike construction and is believed to be highest stage experienced since 1915.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	3.6	3.5	3.5	.70	1.9	12	2230	39	23	9.7	5.2
2	2.3	3.7	3.6	3.3	.60	1.9	10	585	36	21	9.7	5.2
3	2.2	4.0	3.6	3.2	.60	1.8	8.0	288	36	19	10	5.8
4	2.0	4.2	3.6	3.1	.60	2.2	7.0	204	34	19	9.7	5.8
5	2.6	5.4	3.6	3.1	.50	2.3	7.0	157	32	63	9.5	6.4
6	3.1	4.9	3.9	3.2	.50	2.1	8.0	137	32	60	9.0	5.8
7	3.7	4.5	3.9	3.5	.50	2.2	8.0	129	32	36	8.8	5.2
8	4.7	4.5	3.6	3.6	.50	2.4	9.0	128	40	28	8.6	4.7
9	4.0	4.0	3.7	3.3	.50	2.1	10	194	90	23	8.2	4.9
10	3.9	4.0	3.7	2.5	.50	2.0	12	218	240	19	7.7	5.0
11	3.9	3.9	3.9	1.4	.50	1.9	15	278	230	18	7.7	4.3
12	3.7	3.9	4.0	1.0	.50	2.1	15	510	168	16	7.7	3.9
13	4.0	3.9	4.2	1.0	.50	2.2	14	363	136	15	7.5	3.7
14	4.0	3.7	4.2	1.0	.50	2.3	14	175	117	15	7.5	3.6
15	3.7	3.9	4.0	1.0	.60	2.6	23	118	89	15	7.9	3.5
16	3.3	3.7	4.0	1.2	.60	4.0	96	96	78	14	8.2	3.6
17	3.7	3.9	4.0	1.2	.60	4.9	125	80	74	14	8.4	4.2
18	2.5	4.0	4.0	1.4	.70	5.2	355	68	71	14	8.2	4.7
19	2.3	4.2	3.9	1.4	.80	8.4	1380	61	76	13	8.4	5.2
20	2.3	4.0	3.6	1.4	.80	35	2130	56	102	13	8.2	5.0
21	2.3	4.2	3.7	1.4	.90	100	2610	55	120	13	7.9	5.8
22	2.3	4.2	3.9	1.2	1.0	120	3300	55	108	13	8.2	6.4
23	2.3	4.3	4.0	1.4	1.1	60	3350	58	84	12	8.2	6.4
24	2.3	4.3	4.0	1.6	1.6	40	2930	62	66	12	8.2	6.2
25	2.4	4.3	3.9	1.8	1.5	24	1980	63	52	12	7.7	7.3
26	2.5	4.9	3.9	2.0	1.8	22	1020	60	40	12	7.5	7.3
27	2.5	4.2	3.9	1.8	1.8	20	855	55	33	11	7.5	7.5
28	2.6	4.0	3.9	1.8	1.9	19	1670	52	30	11	7.3	8.8
29	2.6	3.7	3.9	1.4	---	17	3410	50	26	11	7.3	8.8
30	2.7	3.5	3.5	1.2	---	16	3290	43	24	11	6.6	6.8
31	3.0	---	3.5	.90	---	14	---	41	---	10	5.8	---
TOTAL	91.5	123.5	118.6	60.80	23.20	541.5	28673.0	6669	2335	586	252.8	167.0
MEAN	2.95	4.12	3.83	1.96	.83	17.5	956	215	77.8	18.9	8.15	5.57
MAX	4.7	5.4	4.2	3.6	1.9	120	3410	2230	240	63	10	8.8
MIN	2.0	3.5	3.5	.90	.50	1.8	7.0	41	24	10	5.8	3.5
AC-FT	181	245	235	121	46	1070	56870	13230	4630	1160	501	331
CAL YR 1974 TOTAL	9133.84											
WTR YR 1975 TOTAL	39641.90											
MEAN	25.0											
MAX	764											
MIN	.74											
AC-FT	18120											
WTR YR 1975	78630											

PEAK DISCHARGE (BASE, 750 FT³/S).---Apr. 23 (0200) 3,600 FT³/S (15.29 FT); Apr. 29 (1800) 3,820 FT³/S (15.71 FT).

KNIFE RIVER BASIN

143

06339490 ELM CREEK NEAR GOLDEN VALLEY, N. DAK.

LOCATION.--Lat 47°06'25", long 102°03'05", in SE¼NW¼ sec.23, T.142 N., R.90 W., Mercer County, on right bank 60 ft (18 m) upstream from highway bridge 13.5 mi (21.7 km) south of Golden Valley.

DRAINAGE AREA.--82 mi² (212 km²), approximately.

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,915.17 ft (583.744 m) above mean sea level.

AVERAGE DISCHARGE.--8 years, 9.52 ft³/s (0.270 m³/s), 6,900 acre-ft/yr (8.51 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 960 ft³/s (27.2 m³/s) Apr. 28, gage height, 15.60 ft (4.755 m) no flow for several months.
Period of record: Maximum discharge, 10,000 ft³/s (283 m³/s) May 9, 1970, gage height, 23.55 ft (7.178 m); no flow for several months each year.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.01			0	.40	58	1.8	.33	1.1	
2		0	0			0	.40	26	1.7	.21	.19	
3		0	0			0	.30	18	1.5	.26	.03	
4		0	0			0	.30	13	1.3	.29	.02	
5		0	0			0	.30	9.7	1.2	.26	.02	
6		0	0			0	.20	8.3	1.0	2.0	0	
7		0	0			0	.30	81	.90	10	0	
8		0	0			0	.50	66	1.1	21	0	
9		0	0			0	2.0	35	2.8	7.8	0	
10		0	0			0	4.0	81	27	4.3	0	
11		0	0			0	5.0	269	31	2.4	.01	
12		0	0			0	4.0	89	19	1.4	.01	
13		0	0			.10	3.0	24	10	.95	.01	
14		0	0			.20	3.0	15	9.5	.65	0	
15		0	0			.20	150	9.2	80	.29	0	
16		0	0			.20	310	7.1	72	.21	.01	
17		0	0			.20	270	5.7	30	.09	.01	
18		0	0			2.5	290	4.4	15	.07	0	
19		0	0			5.0	330	2.6	68	.05	0	
20		0	0			5.0	300	3.8	118	.05	0	
21		0	0			3.0	340	4.3	45	.04	0	
22		0	0			3.0	330	4.0	18	.03	0	
23		.01	0			2.5	240	18	10	.03	0	
24		.01	0			2.0	105	69	6.5	.02	0	
25		.01	0			1.5	61	28	4.7	.02	0	
26		.01	0			1.5	98	12	2.7	.01	0	
27		.01	0			1.0	103	6.7	1.4	.01	0	
28		.01	0			1.0	553	4.6	1.2	.01	0	
29		.01	0		---	.50	554	3.5	.55	.01	0	
30		.01	0		---	.50	177	2.6	.26	0	0	
31		---	0		---	.50	---	2.1	---	.60	0	---
TOTAL	0	.08	.01	0	0	30.40	4234.70	980.6	583.11	53.39	1.41	0
MEAN	0	.003	.0003	0	0	.98	141	31.6	19.4	1.72	.046	0
MAX	0	.01	.01	0	0	5.0	554	269	118	21	1.1	0
MIN	0	0	0	0	0	0	.20	2.1	.26	0	0	0
AC-FT	0	.2	.02	0	0	60	8400	1950	1160	106	2.8	0

CAL YR 1974 TOTAL 1914.65 MEAN 5.25 MAX 160 MIN 0 AC-FT 3800
WTR YR 1975 TOTAL 5883.70 MEAN 16.1 MAX 554 MIN 0 AC-FT 11670

PEAK DISCHARGE (BASE, 100 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-16	--	--	340	5-7	1400	4.88	116
4-19	--	--	370	5-11	1300	7.92	339
4-22	--	--	400	6-15	1700	4.83	113
4-29	0100	15.60	960	6-20	0100	5.53	168

KNIFE RIVER BASIN

06339500 KNIFE RIVER NEAR GOLDEN VALLEY, N. DAK.

LOCATION.--Lat 47°09'40", long 102°03'39", in SE¼ sec.34, T.143 N., R.90 W., Mercer County, on left bank 6 ft (2 m) downstream from highway bridge, 4.5 mi (7.2 km) downstream from Elm Creek, and 9 mi (14 km) south of Golden Valley.

DRAINAGE AREA.--1,230 mi² (3,190 km²), approximately.

PERIOD OF RECORD.--May 1903 to November 1906, April 1907 to November 1915, April 1916 to October 1919, and October 1921 to September 1924 (published as "at Broncho" or "near Broncho"), and April 1943 to current year. Monthly discharge only for some periods published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 1,847.13 ft (563.005 m) above mean sea level. See WSP 1729 or 1917 for history of changes prior to May 1, 1946.

AVERAGE DISCHARGE.--49 years, 97.2 ft³/s (2.753 m³/s), 70,420 acre-ft/yr (86.8 hm³/yr); median of yearly mean discharges, 86 ft³/s (2.44 m³/s), 62,300 acre-ft/yr (76.8 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 5,070 ft³/s (144 m³/s) Apr. 30, gage height, 21.76 ft (6.632 m), minimum daily discharge, 1.0 ft³/s (0.028 m³/s) Jan. 12.

Period of record: Maximum discharge, 11,200 ft³/s (317 m³/s) May 9, 1970, gage height, 25.84 ft (7.876 m); maximum gage height, 26.7 ft (8.14 m) Mar. 26, 27, 1943, from floodmark; no flow at times in some years.

The flood in 1943 was the only major flood in the period 1930-49, according to local residents.

REMARKS.--Records good except those for the winter period, which are fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1006: Drainage area. WSP 1279: 1904, 1914-19(M), 1922-24(M), 1944.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	7.7	4.7	4.2	1.8	5.8	11	3130	75	46	29	8.6
2	1.7	6.9	4.5	4.0	1.6	6.0	9.0	1580	70	44	37	8.6
3	1.9	6.6	4.5	4.2	1.6	6.2	8.0	594	65	41	22	8.9
4	2.5	6.6	4.5	4.0	1.6	6.4	7.0	409	61	39	15	9.2
5	3.1	6.3	4.7	4.0	1.4	6.6	6.2	312	58	36	13	8.9
6	3.3	6.1	4.7	4.2	1.4	6.3	5.8	268	55	76	12	11
7	2.7	6.6	5.0	4.5	1.4	6.0	6.6	294	54	100	11	12
8	2.9	6.3	4.8	4.0	1.4	5.5	8.0	322	54	95	11	13
9	2.9	6.1	4.6	3.5	1.3	5.0	11	304	80	129	9.9	12
10	2.7	6.1	4.6	2.5	1.3	4.5	13	446	163	77	9.5	11
11	2.9	5.8	5.0	1.5	1.3	3.8	16	625	418	55	11	10
12	2.7	5.8	5.0	1.0	1.4	4.0	34	831	325	45	11	8.9
13	2.9	6.3	5.2	1.2	1.4	4.3	59	709	256	37	11	8.3
14	2.7	6.3	5.5	1.2	1.4	5.0	60	454	220	33	11	7.4
15	2.7	6.9	5.5	1.4	1.3	5.8	236	286	250	28	12	7.7
16	2.7	7.2	5.5	1.6	1.2	6.6	901	207	245	26	11	7.4
17	2.7	7.2	5.5	1.6	1.2	8.9	921	160	238	25	11	6.9
18	2.7	6.9	5.5	1.8	1.2	10	1010	140	207	24	11	6.3
19	3.1	7.2	4.7	1.8	1.4	20	1780	120	291	22	9.9	8.9
20	3.3	6.6	4.7	1.4	1.6	50	3090	112	517	20	9.9	9.2
21	4.0	7.4	4.7	1.6	1.8	60	3770	108	486	19	9.5	7.1
22	3.3	7.2	4.7	1.4	2.0	100	4090	103	322	19	9.2	6.6
23	3.1	6.9	5.0	1.4	2.5	50	4230	124	207	19	8.9	8.3
24	3.1	6.1	5.0	1.8	2.8	30	3480	181	146	18	8.6	9.2
25	3.1	6.6	4.7	2.4	3.0	25	2630	203	112	17	8.0	9.2
26	3.6	6.6	4.7	2.6	3.5	20	1810	160	95	16	8.6	8.6
27	3.8	6.3	4.7	2.4	4.2	16	1300	134	75	16	8.9	10
28	3.8	6.3	5.0	2.2	5.0	14	2320	110	65	15	8.9	11
29	3.6	6.1	5.0	2.0	---	14	4580	96	58	16	8.3	10
30	3.8	5.2	5.2	1.8	---	13	4640	90	50	14	8.3	11
31	5.0	---	4.7	1.8	---	13	---	82	---	15	8.3	---
TOTAL	94.0	196.2	152.1	75.0	53.0	531.7	41042.6	12694	5318	1182	373.7	275.2
MEAN	3.03	6.54	4.91	2.42	1.89	17.2	1368	409	177	38.1	12.1	9.17
MAX	5.0	7.7	5.5	4.5	5.0	100	4640	3130	517	129	37	13
MIN	1.7	5.2	4.5	1.0	1.2	3.8	5.8	82	50	14	8.0	6.3
AC-FT	186	389	302	149	105	1050	81410	25180	10550	2340	741	546
CAL YR 1974	TOTAL	14249.1	MEAN	39.0	MAX	950	MIN	1.2	AC-FT	28260		
WTR YR 1975	TOTAL	61987.5	MEAN	170	MAX	4640	MIN	1.0	AC-FT	123000		

PEAK DISCHARGE (BASE, 1,500 FT³/S).--Apr. 23 (1400) 4,270 FT³/S (20.36 FT); Apr. 30 (0100) 5,070 FT³/S (21.76 FT).

KNIFE RIVER BASIN

145

06339560 BRUSH CREEK NEAR BEULAH, N. DAK.

LOCATION.--Lat 47°10'43", long 101°47'05", NW¼SW¼NW¼ sec.25, T.143 N., R.88 W., on right bank 60 ft (18 m) upstream from bridge on State Highway 49, 6 mi (10 km) south of Beulah.

DRAINAGE AREA.--22 mi² (57 km²), approximately.

PERIOD OF RECORD.--Oct. 1974 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,948 ft (593.8 m) from State Highway Department levels.

EXTREMES.--Current year: Maximum discharge, about 60 ft³/s (1.70 m³/s), July 31, gage height 5.34 ft (1.628 m); maximum observed gage height 6.87 ft (2.094 m), April 17; no flow for several months.
Period of record: Maximum discharge, about 60 ft³/s (1.70 m³/s), July 31, gage height 5.34 ft (1.628 m), no flow at times.

REMARKS.--Records fair. Records of suspended sediment discharge for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	1.1	.20	.05		0	0	6.2	.85	0	6.0	.04
2	.08	.74	.18	.05		0	0	4.6	.70	0	3.0	.05
3	.08	.58	.18	.05		0	0	3.8	.58	0	.80	.05
4	.08	.58	.16	.05		0	0	3.5	.54	0	.50	.05
5	.08	.74	.14	.05		0	0	2.6	.50	0	.30	.05
6	.09	.70	.14	.05		0	0	2.3	.46	0	.20	.04
7	.09	.62	.14	.05		0	0	3.5	.32	0	.10	.04
8	.09	.58	.14	.05		0	0	3.8	.29	0	0	.04
9	.09	.58	.14	.05		0	0	6.4	1.3	0	0	.05
10	.10	.50	.14	0		0	0	6.2	2.2	0	0	.05
11	.09	.50	.14	0		0	0	7.8	1.9	0	0	.05
12	.10	.42	.12	0		0	0	5.9	.66	0	0	.05
13	.12	.50	.10	0		.50	0	5.4	.32	0	0	.06
14	.14	.50	.10	0		1.0	5.0	4.7	.26	0	0	.06
15	.14	.50	.10	0		2.0	15	6.2	1.4	0	0	.06
16	.14	.50	.10	0		4.0	30	5.0	1.0	0	0	.06
17	.14	.46	.10	0		7.0	35	4.2	.46	0	0	.06
18	.14	.46	.10	0		7.0	25	3.6	.32	0	0	.06
19	.14	.50	.10	0		5.0	22	3.5	.46	0	0	.38
20	.16	.46	.10	0		4.0	20	4.7	.50	0	0	.32
21	.16	.46	.10	0		3.0	28	5.3	.29	0	.01	.26
22	.16	.40	.10	0		2.0	30	5.4	.18	0	.02	.20
23	.18	.40	.05	0		1.0	28	6.4	.16	0	.03	.16
24	.20	.35	.05	0		.50	15	6.6	.05	0	.04	.16
25	.20	.35	.05	0		0	11	6.4	.03	0	.05	.16
26	.22	.40	.05	0		0	15	5.0	.01	0	.06	.12
27	.22	.35	.05	0		0	12	3.4	0	0	.05	.16
28	.22	.20	.05	0		0	25	2.8	0	0	.05	.22
29	.22	.20	.05	0	---	0	18	1.5	0	0	.05	.22
30	.24	.20	.05	0	---	0	11	1.2	0	0	.04	.22
31	.38	---	.05	0	---	0	---	1.0	---	9.0	.04	---
TOTAL	4.57	14.83	3.27	.45	0	37.00	345.0	138.9	15.74	9.0	11.34	3.52
MEAN	.15	.49	.11	.015	0	1.19	11.5	4.48	.52	.29	.37	.12
MAX	.38	1.1	.20	.05	0	7.0	35	7.8	2.2	9.0	6.0	.38
MIN	.08	.20	.05	0	0	0	0	1.0	0	0	0	.04
AC-FT	9.1	29	6.5	.9	0	73	684	276	31	18	22	7.0
WTR YR 1975	TOTAL 583.62			MEAN 1.60	MAX	35	MIN 0	AC-FT 1160				

PEAK DISCHARGE (BASE, 50 FT³/S).--July 31 (1800) about 60 FT³/S (5.34 FT).

KNIFE RIVER BASIN

06340000 SPRING CREEK AT ZAP, N. DAK.

LOCATION.--Lat 47°17'10", long 101°55'31", in SW¼ sec.14, T.144 N., R.89 W., Mercer County, on right bank 250 ft (76 m) downstream from Burlington Northern Railway bridge in Zap and 9 mi (14 km) upstream from mouth.

DRAINAGE AREA.--549 mi² (1,422 km²).

PERIOD OF RECORD.--March to September 1924, October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,819.39 ft (554.550 m) above mean sea level. Mar. 4 to Sept. 30, 1924, nonrecording gage at site 250 ft (76 m) upstream at different datum. Oct. 1, 1945, to Sept. 30, 1947, nonrecording gage 250 ft (76 m) upstream at datum 1.12 ft (0.341 m) higher.

AVERAGE DISCHARGE.--30 years, 44.0 ft³/s (1.246 m³/s), 31,880 acre-ft/yr (39.3 hm³/yr); median of yearly mean discharges, 39 ft³/s (1.10 m³/s), 28,300 acre-ft/yr (35 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,800 ft³/s (79.3 m³/s) Apr. 22, gage height, 17.33 ft (5.282 m), backwater from ice; minimum daily discharge, 2.5 ft³/s (0.071 m³/s) Feb. 12-23.

Period of record: Maximum discharge, 6,130 ft³/s (174 m³/s) Apr. 7, 1952, gage height, 20.03 ft (6.105 m); maximum gage height, 20.70 ft (6.309 m) Mar. 15, 1972; no flow at times.

Maximum stage known occurred in about 1902, from ice jam. Floods of February 1913 and March 1943 reached a stage of about 20 ft (6.10 m) and 19.5 ft (5.94 m), respectively, from information by local residents.

REMARKS.--Records fair. Flow slightly regulated by Lake Ilo 56 mi (90 km) upstream, capacity, 7,130 acre-ft (8.79 hm³). Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	7.8	7.8	4.0	3.0	4.0	22	854	33	24	12	7.8
2	6.1	9.4	6.8	4.0	3.0	3.0	22	457	32	22	11	7.4
3	5.8	9.4	6.4	4.0	3.0	3.0	22	308	32	108	12	6.8
4	5.6	10	7.1	4.0	3.0	4.0	20	224	29	71	12	6.4
5	5.6	10	8.6	4.0	2.8	4.0	18	150	27	35	11	6.1
6	5.6	9.4	8.2	4.0	2.8	3.0	18	125	27	30	11	5.8
7	5.6	8.2	6.8	3.0	2.8	3.0	22	117	25	61	11	5.8
8	5.8	7.8	6.1	3.0	2.8	3.0	20	113	29	128	9.4	5.8
9	5.6	7.8	6.8	3.0	2.8	3.0	20	119	34	68	8.6	5.8
10	5.4	7.4	7.4	3.0	2.8	3.0	22	126	46	35	9.0	5.6
11	5.8	7.4	8.2	3.0	2.8	3.0	22	138	47	23	8.6	5.4
12	5.8	7.4	8.6	3.0	2.5	3.0	32	151	49	20	7.8	5.6
13	5.8	8.2	8.6	3.0	2.5	3.0	40	136	52	18	7.4	5.6
14	6.4	8.2	8.2	3.0	2.5	3.0	50	103	55	17	11	5.6
15	6.1	7.8	8.6	3.0	2.5	4.0	70	100	57	17	11	5.6
16	7.4	7.8	8.2	3.0	2.5	6.0	80	92	54	16	11	5.6
17	6.4	8.2	8.2	3.0	2.5	30	100	82	47	16	11	5.8
18	4.8	8.2	8.0	3.0	2.5	70	150	70	41	15	9.9	7.1
19	4.4	8.2	8.0	3.0	2.5	100	700	62	45	14	7.4	11
20	5.1	8.2	7.0	3.0	2.5	75	1400	62	77	13	7.1	13
21	4.4	8.6	7.0	3.0	2.5	35	1850	58	77	12	7.4	12
22	4.2	8.6	6.0	3.0	2.5	30	2450	55	59	11	7.8	12
23	4.2	8.2	6.0	3.0	2.5	28	2300	65	48	16	7.8	12
24	4.2	7.8	5.0	3.0	3.0	28	1270	54	41	17	11	10
25	4.2	7.8	5.0	3.0	3.0	26	701	65	37	14	102	9.9
26	4.0	8.2	5.0	3.0	3.0	24	635	56	32	12	63	8.6
27	4.4	7.8	4.0	3.0	3.0	24	532	54	27	9.9	29	9.0
28	4.8	7.8	4.0	3.0	4.0	23	1080	55	25	11	17	11
29	5.1	7.8	4.0	3.0	---	22	1330	45	24	12	13	14
30	5.1	7.8	4.0	3.0	---	22	1240	38	27	11	9.4	12
31	5.6	---	4.0	3.0	---	22	---	34	---	11	8.6	---
TOTAL	165.4	247.2	207.6	99.0	77.6	614.0	16238	4168	1235	887.9	475.2	244.1
MEAN	5.34	8.24	6.70	3.19	2.77	19.8	541	134	41.2	28.6	15.3	8.14
MAX	7.4	10	8.6	4.0	4.0	100	2450	854	77	128	102	14
MIN	4.0	7.4	4.0	3.0	2.5	3.0	18	34	24	9.9	7.1	5.4
AC-FT	328	490	412	196	154	1220	32210	8270	2450	1760	943	484

CAL YR 1974 TOTAL 9915.1 MEAN 27.2 MAX 555 MIN 1.2 AC-FT 19670
WTR YR 1975 TOTAL 24659.0 MEAN 67.6 MAX 2450 MIN 2.5 AC-FT 48910

PEAK DISCHARGE (BASE, 1,000 FT³/S).--Apr. 22, 2,800 FT³/S; Apr. 28 (2300) 1,500 FT³/S (13.32 FT).

KNIFE RIVER BASIN

147

06340200 WEST BRANCH OTTER CREEK NEAR BEULAH, N. DAK.

LOCATION.--Lat 47°08'05", long 101°39'35", in NW¼NW¼SW¼ sec.12, T.142 N., R.87 W., Oliver County, on right bank 10 mi (16 km) southeast of Beulah.

DRAINAGE AREA.--26.5 mi² (68.6 km²).

PERIOD OF RECORD.--April 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--10 years, 3.68 ft³/s (0.104 m³/s), 2,670 acre-ft/yr (3.29 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 360 ft³/s (10.2 m³/s) Apr. 28, gage height, 6.00 ft (1.829 m), no flow for several months.

Period of record: Maximum discharge, 23,700 ft³/s (671 m³/s) June 24, 1966, gage height, 17.2 ft (5.243 m), from floodmark, from rating curve extended above 77 ft³/s (2.18 m³/s) on basis of slope-area measurement of peak flow; no flow at times in some years.

REMARKS.--Records fair except those for periods of no gage-height record, which are poor. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	0	14	1.5	.44	.10	0
2						0	0	7.8	1.5	.38	.08	0
3						0	0	6.4	1.3	.36	.06	0
4						0	0	4.8	1.5	.36	.04	0
5						0	0	3.6	1.3	.30	.04	0
6						0	0	2.8	1.2	.28	.02	0
7						0	0	4.4	1.2	.28	.02	0
8						0	0	10	1.2	.25	.02	0
9						0	0	17	3.4	.18	.01	0
10						0	0	28	25	.18	.01	0
11						0	0	25	25	.18	.01	0
12						0	0	9.6	10	.16	.01	0
13						.20	0	5.9	5.0	.16	.01	0
14						.50	2.0	9.6	4.0	.14	.02	0
15						1.0	5.0	4.2	3.8	.12	.02	0
16						1.5	10	2.6	12	.10	.01	0
17						2.0	20	1.8	10	.10	.01	0
18						2.0	30	1.6	5.0	.10	.01	.04
19						1.8	40	1.4	4.2	.06	.01	.08
20						1.4	50	1.5	4.4	.02	.01	.06
21						1.0	60	1.5	6.9	.01	.01	.02
22						.80	65	1.5	4.2	0	.01	.02
23						.40	44	5.9	2.4	0	.01	.02
24						.20	36	11	1.6	0	.01	.01
25						.10	35	8.8	1.2	0	.01	.01
26						.05	57	4.8	.91	0	.01	.01
27						0	46	3.0	.69	0	.01	.02
28						0	212	2.2	.56	0	.01	.01
29					---	0	77	2.0	.50	0	.01	0
30					---	0	38	1.6	.50	0	0	0
31		---			---	0	---	2.0	---	.10	0	---
TOTAL	0	0	0	0	0	12.95	827.0	206.3	141.96	4.26	.61	.30
MEAN	0	0	0	0	0	.42	27.6	6.65	4.73	.14	.020	.010
MAX	0	0	0	0	0	2.0	212	28	25	.44	.10	.08
MIN	0	0	0	0	0	0	0	1.4	.50	0	0	0
AC-FT	0	0	0	0	0	26	1640	409	282	8.4	1.2	.6

CAL YR 1974 TOTAL 332.11 MEAN .91 MAX 50 MIN 0 AC-FT 659
WTR YR 1975 TOTAL 1193.38 MEAN 3.27 MAX 212 MIN 0 AC-FT 2370

PEAK DISCHARGE (BASE, 100 FT³/S).--Apr. 28 (1700) 360 FT³/S (6.00 FT).

06340500 KNIFE RIVER AT HAZEN, N. DAK.

LOCATION.--Lat 47°17'06", long 101°37'26", in SE¼ sec.18, T.144 N., R.86 W., Mercer County, on right bank at upstream side of highway bridge, 0.5 mi (0.8 km) south of Hazen and 3 mi (5 km) upstream from Antelope Creek.

DRAINAGE AREA.--2,240 mi² (5,800 km²), approximately.

PERIOD OF RECORD.--October to November 1928, March 1929 to September 1933, August 1937 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 1,712.35 ft (521.924 m) above mean sea level. Prior to Sept. 25, 1947, nonrecording gages at same site and datum.

AVERAGE DISCHARGE.--42 years (1929-33, 1937-75), 181 ft³/s (5.126 m³/s), 131,100 acre-ft/yr (162 hm³/yr); median of yearly mean discharges, 150 ft³/s (4.25 m³/s), 109,000 acre-ft/yr (134 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 6,600 ft³/s (187 m³/s) May 1, gage height, 22.60 ft (6.888 m) from graph of observer's readings, maximum gage height observed, 23.37 ft (7.123 m) Apr. 24, backwater from debris; minimum daily discharge, 8.0 ft³/s (0.23 m³/s) Feb. 8-20, minimum gage height 2.55 ft (0.777 m/s) Oct. 9.

Period of record: Maximum discharge, 35,300 ft³/s (1,000 m³/s) June 24, 1966, gage height, 27.01 ft (8.233 m); no flow at times in 1933, 1959, 1962.

According to local residents, the floods of 1943 and 1950 were not exceeded during the period 1884 to 1942.

REMARKS.--Records fair except those above 1,000 ft³/s (28.3 m³/s), which are poor. Small diversions above station. Slight regulation by Lake Ilo 81 mi (130 km) upstream, capacity, 7,130 acre-ft (8.79 hm³). Records of chemical analyses and suspended sediment discharge for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1146: 1943. WSP 1279: 1930-31, 1932-33(M). WSP 1917: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	20	28	18	12	12	26	6100	148	134	87	31
2	13	24	26	18	12	12	23	3750	142	123	85	31
3	13	26	25	18	12	12	22	1690	136	120	84	29
4	13	25	23	18	12	14	20	946	130	197	80	27
5	14	26	24	18	10	16	18	676	125	153	56	26
6	13	23	24	18	10	16	15	535	120	130	54	26
7	13	22	24	18	10	16	15	481	119	233	41	26
8	13	21	23	18	8.0	16	16	542	118	230	40	25
9	14	22	23	18	8.0	16	16	537	140	236	34	24
10	13	22	23	16	8.0	16	16	764	204	233	31	24
11	12	22	24	14	8.0	16	16	768	305	162	30	23
12	13	21	24	12	8.0	16	20	948	494	124	29	23
13	13	21	24	10	8.0	16	30	986	404	105	28	23
14	16	20	23	10	8.0	16	40	768	343	94	27	22
15	18	18	23	12	8.0	18	50	508	333	88	30	21
16	18	18	22	12	8.0	25	250	355	379	83	29	20
17	17	18	22	12	8.0	100	1100	295	355	77	29	20
18	19	20	21	12	8.0	200	1400	252	326	75	28	22
19	15	20	20	12	8.0	200	1850	226	299	69	28	29
20	15	22	20	12	8.0	150	3500	220	530	65	28	30
21	15	22	20	12	10	100	4300	220	636	62	29	32
22	15	24	20	12	10	75	6100	225	560	58	29	32
23	15	24	20	12	10	60	6400	220	432	62	29	31
24	15	26	18	12	10	50	6250	322	301	62	28	31
25	16	26	18	12	10	40	4600	353	239	60	47	30
26	15	26	18	12	12	40	3400	288	203	56	128	29
27	15	28	18	12	12	35	2500	239	178	53	87	30
28	15	28	18	12	12	30	2450	213	156	50	57	31
29	15	30	18	12	---	30	5600	194	142	48	43	34
30	16	30	18	12	---	30	6400	173	145	45	38	38
31	17	---	18	12	---	30	---	160	---	45	34	---
TOTAL	457	695	670	428	268.0	1423	56443	23954	8142	3332	1427	820
MEAN	14.7	23.2	21.6	13.8	9.57	45.9	1881	773	271	107	46.0	27.3
MAX	19	30	28	18	12	200	6400	6100	636	236	128	38
MIN	12	18	18	10	8.0	12	15	160	118	45	27	20
AC-FT	906	1380	1330	849	532	2820	112000	47510	16150	6610	2830	1630
CAL YR 1974	TOTAL	37257.8	MEAN	102	MAX	1300	MIN	9.8	AC-FT	73900		
WTR YR 1975	TOTAL	98059.0	MEAN	269	MAX	6400	MIN	8.0	AC-FT	194500		

PEAK DISCHARGE (BASE, 1,500 FT³/S).--Apr. 24, 6,500 FT³/S; May 1, 6,600 FT³/S.

MISSOURI RIVER MAIN STEM

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06340700 MISSOURI RIVER NEAR STANTON, N. DAK.

LOCATION.--Lat 47°17'14", long 101°20'25", in SW¼ sec.16, T.144 N., R.84 W., McLean County, on right bank 3 mi (5 km) southeast of Stanton, 0.1 mi (0.2 km) below Ft. Clark irrigation pumping station, 0.4 mi (0.6 km) above the United Power Association power plant at mile 1,372 (kilometre 2,208).

DRAINAGE AREA.--182,000 mi² (471,400 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,650.00 ft (502.920 m) above mean sea level (levels by Corps of Engineers). Prior to Sept. 30, 1964, at datum 50.00 ft (15.240 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 24.56 ft (7.486 m) Feb. 22, 1965; minimum daily recorded, 11.22 ft (3.420 m) Sept. 29, 1974.

REMARKS.--Stage regulated by Lake Sakakawea. (See station 06338000.)

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.68	16.00	14.96	14.23	18.65	18.05	14.78	16.22	17.37	19.75	---	17.45
2	13.81	15.60	15.21	15.42	18.77	17.75	14.64	16.10	17.40	19.71	---	17.43
3	15.98	15.71	15.82	15.36	18.45	18.15	14.96	14.95	17.33	19.73	---	17.39
4	16.06	15.98	15.70	14.93	19.30	17.70	14.33	14.26	17.51	19.78	---	17.38
5	15.75	15.38	15.54	13.98	19.37	16.98	14.29	15.18	17.80	19.78	---	17.34
6	15.38	15.55	15.53	14.47	19.51	16.91	14.47	15.28	17.82	20.20	---	17.38
7	15.82	15.54	15.59	15.20	19.15	17.35	---	15.40	17.85	20.83	---	17.32
8	15.60	15.47	15.22	14.74	19.85	18.33	---	16.40	17.85	---	---	17.44
9	15.79	15.07	15.94	14.56	19.94	18.43	---	17.18	17.89	---	---	17.30
10	15.69	14.24	15.41	14.35	19.68	18.05	---	17.20	17.81	---	---	17.41
11	15.69	14.93	15.53	15.67	19.84	18.42	---	17.18	17.84	---	---	17.39
12	15.88	15.44	15.53	19.76	19.43	18.80	---	16.92	17.87	---	---	17.38
13	16.23	15.61	15.64	19.96	19.12	18.76	---	16.25	17.84	---	---	17.40
14	16.43	15.02	15.48	20.09	19.21	18.77	---	16.21	17.82	---	---	17.45
15	16.47	15.71	14.93	19.40	18.74	18.65	---	16.20	17.82	---	---	17.45
16	16.62	15.42	15.50	18.71	18.62	18.08	12.81	16.39	17.85	---	---	17.45
17	16.58	14.43	15.79	18.80	18.34	18.44	13.17	17.44	17.82	---	---	17.45
18	16.42	15.22	15.41	18.21	18.48	18.31	14.01	17.50	17.83	---	---	17.34
19	16.51	15.21	15.30	18.49	18.67	17.39	14.72	17.52	17.83	---	---	17.01
20	16.42	15.35	15.55	18.54	18.63	16.92	14.30	17.68	17.81	---	---	16.83
21	16.49	15.34	15.22	18.38	18.52	16.67	14.57	17.39	17.83	---	---	17.09
22	16.27	15.21	14.24	18.61	18.00	16.29	14.88	17.52	17.86	---	---	17.21
23	16.44	15.25	15.06	18.68	18.39	16.34	14.87	17.49	17.88	---	---	17.37
24	16.58	15.07	15.06	18.58	18.36	16.02	14.18	17.47	18.37	---	---	17.41
25	16.50	14.68	---	18.62	18.44	16.54	14.01	17.41	19.00	---	---	17.42
26	16.70	15.09	---	18.72	18.11	15.97	14.06	17.37	19.55	---	---	17.30
27	16.30	15.08	---	18.78	18.28	15.18	13.45	17.44	19.69	---	---	17.37
28	16.47	14.99	---	18.83	18.29	15.53	13.77	17.54	19.69	---	---	17.39
29	16.51	15.09	---	18.47	---	15.99	14.88	17.45	19.75	---	16.00	17.35
30	16.51	15.32	15.18	18.55	---	15.36	16.44	17.43	19.75	---	16.07	17.36
31	16.61	---	15.04	19.22	---	15.04	---	17.42	---	---	17.41	---
MEAN	16.10	15.27	---	17.43	18.86	17.26	---	16.75	18.14	---	---	17.34
MAX	16.70	16.00	---	20.09	19.94	18.80	---	17.68	19.75	---	---	17.45
MIN	13.81	14.24	---	13.98	18.00	15.04	---	14.26	17.33	---	---	16.83

MISSOURI RIVER MAIN STEM

06340900 MISSOURI RIVER NEAR HENSLER, N. DAK.

LOCATION.--Lat 47°16'45", long 101°11'03", in SW¼ sec.22, T.144 N., R.83 W., McLean County, on left bank about 7.5 mi (12.0 km) west of Washburn at mile 1,362 (kilometre 2,191).

DRAINAGE AREA.--183,000 mi² (474,000 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,640.00 ft (499.872 m) above mean sea level (levels by Corps of Engineers). Prior to Sept. 30, 1964, at datum 40 ft (12.192 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 27.77 ft (8.464 m) Mar. 20, 1965; minimum daily recorded, 15.52 ft (4.730 m) May 10, 1966.

REMARKS.--Stage regulated by Lake Sakakawea. (See station 06338000.) Records of water temperatures for the water year 1975 are published in Section 2 of this report.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.64	19.93	18.84	18.19			21.32	20.36		23.30	24.77	20.91
2	17.38	19.44	18.94	18.85			20.65	20.21		23.25	24.82	20.92
3	19.65	19.55	19.58	19.11			19.91	19.20		23.25	24.82	20.90
4	20.01	19.92	19.50	18.91		21.54	18.86	18.38		23.26	24.82	20.90
5	19.69	19.23	19.39	17.66		21.10	18.42	19.00		23.23	24.84	20.88
6	19.43	19.41	19.27	17.97		21.04	18.32	19.23		23.61	24.88	20.91
7	19.56	19.34	19.38	18.74		21.43	17.97	19.47		24.19	24.88	20.87
8	19.50	19.33	19.06	18.73		22.25	18.03	20.36		24.37	24.85	20.98
9	19.69	18.90	19.66	18.26		22.30	17.93	21.18		24.37	24.83	20.86
10	19.56	18.05	19.22	17.88		22.01	17.88	21.23		24.69	24.83	20.98
11	19.63	18.62	19.30	18.28		22.41	17.75	21.14		24.83	24.84	20.96
12	19.76	19.16	19.32	21.58		22.84	17.82	21.08		24.84	24.79	20.95
13	19.92	19.42	19.45	23.30		22.91	17.57	20.38		24.82	24.79	21.01
14	20.27	18.82	19.33	23.74		22.94	17.85	20.25		24.84	24.74	21.06
15	20.35	19.47	18.86	23.52		22.73	17.60	20.22		24.84	24.78	21.08
16	20.50	19.26	19.13	22.89		22.09	16.93	20.33		24.84	24.75	21.09
17	20.46	18.32	19.69	23.06		21.85	17.19	21.33		27.78	24.76	21.10
18	20.31	18.82	19.20	22.74		21.92	18.02	21.49		24.74	24.77	20.97
19	20.40	18.99	19.12	22.84		21.77	18.74	21.48		24.69	24.36	20.69
20	20.29	19.12		22.98		21.06	18.52	21.62	21.66	24.75	23.82	20.53
21	20.34	19.16		22.83		20.59	18.55	21.40	21.65	24.81	23.10	20.76
22	20.13	18.99		23.03		20.04	18.95	21.51	21.65	24.79	22.44	20.87
23	20.33	19.04		23.14		20.24	19.02	21.48	21.62	24.73		21.06
24	20.41	19.04		23.20		20.40	18.47	21.44	21.99	24.73		21.71
25	20.35	18.27	17.86	23.09		21.48	18.08	21.38	22.59	24.78	20.62	21.13
26	20.52	18.94	18.51	23.36		21.47	18.22	21.33	23.10	24.75	20.15	21.01
27	20.21	18.85	19.07			22.05	17.64	21.38	23.26	24.77	19.40	21.11
28	20.27	18.96	18.40			22.58	17.80	21.47	23.25	24.81	20.15	21.12
29	20.35	18.73	17.66			23.21	18.78	21.40	23.32	24.80	19.54	21.05
30	20.35	19.14	18.53			22.42	20.41	21.40	23.35	24.84	19.57	21.06
31	20.45		18.80			21.90				24.85	20.78	
MEAN	19.96	19.07					18.44			24.55		20.98
MAX	20.52	19.93					21.32			27.78		21.71
MIN	17.38	18.05					16.93			23.23		20.53

06341000 MISSOURI RIVER AT WASHBURN, N. DAK.

LOCATION.--Lat 47°17'20", long 101°02'15", in SE¼SW¼ sec.14, T.144 N., R.82 W., McLean County, on left bank near municipal water plant in Washburn at mile 1,355 (kilometre 2,180).

DRAINAGE AREA.--184,000 mi² (476,600 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,640.00 ft (499.872 m) above mean sea level. Prior to Sept. 30, 1964, at datum 40 ft (12.192 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 22.76 ft (6.937 m) Jan. 11, 1964; minimum daily recorded, 10.62 ft (3.237 m) Mar. 26, 1968.

REMARKS.--Stage regulated by Lake Sakakawea. (See station 06338000.)

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.62	15.16	14.18	13.61	18.63	17.80	19.30	15.24	16.21	18.30	19.56	16.28
2	12.53	14.70	14.15	13.95	18.59	17.70	18.91	15.08	16.22	18.25	19.59	16.27
3	14.02	14.78	14.74	14.29	18.58	17.52	17.89	14.29	16.21	18.26	19.61	16.23
4	14.22	15.10	14.72	14.17	19.00	16.67	16.47	13.45	16.26	18.29	19.61	16.20
5	14.02	14.52	14.66	13.15	18.90	16.25	15.63	13.62	16.57	---	---	16.17
6	13.90	14.68	14.51	13.29	18.90	16.23	15.01	14.08	16.62	---	---	16.18
7	14.26	14.58	14.61	13.87	18.80	16.31	14.18	14.35	16.67	---	---	16.15
8	14.17	14.61	14.42	14.03	19.08	17.34	13.70	15.06	16.68	19.23	---	16.24
9	14.26	14.24	14.81	13.53	19.15	17.48	13.53	15.84	16.74	19.25	---	16.14
10	14.22	13.57	14.55	13.25	18.95	17.15	13.28	15.98	16.69	19.41	---	---
11	---	13.88	14.56	14.42	18.96	17.42	13.12	15.93	16.67	19.61	---	---
12	---	14.36	14.55	16.48	18.72	17.84	13.14	15.92	16.71	19.60	---	---
13	---	14.58	14.76	18.39	18.34	17.99	12.88	15.34	16.72	19.56	---	---
14	---	14.14	14.60	18.90	18.41	18.11	13.08	15.11	16.72	19.54	---	---
15	---	14.64	14.14	18.88	18.19	18.19	12.90	15.09	16.72	19.54	---	---
16	---	14.53	14.46	18.32	17.94	17.94	12.34	15.10	16.72	19.53	---	---
17	---	13.83	14.79	18.32	17.77	17.96	12.34	15.97	16.72	19.46	---	---
18	---	14.00	---	18.17	17.97	18.28	12.96	16.26	16.72	19.46	---	---
19	---	14.26	---	18.12	18.03	18.65	13.67	16.25	16.73	19.40	---	---
20	---	14.35	---	18.28	18.12	17.73	13.72	16.34	16.72	19.45	---	---
21	---	14.41	---	19.02	18.16	17.06	13.37	16.19	16.71	19.52	---	---
22	---	14.26	---	18.29	17.89	16.03	13.86	16.23	16.71	19.50	---	---
23	15.39	14.31	---	18.38	17.91	16.20	14.02	16.24	16.70	19.45	---	---
24	15.42	14.33	---	18.49	17.86	17.17	13.62	16.23	16.94	19.44	---	16.28
25	15.42	13.63	---	18.39	18.02	18.96	13.00	16.20	17.48	19.51	---	16.31
26	15.56	14.21	---	18.61	17.75	19.42	13.36	16.16	18.00	19.50	15.60	16.23
27	15.35	14.09	14.30	18.58	17.84	20.02	12.81	16.17	18.20	19.50	14.91	16.29
28	15.35	14.26	13.79	18.66	17.92	20.13	12.67	16.30	18.20	19.56	15.57	16.31
29	15.44	13.95	13.23	18.66	---	20.37	13.47	16.28	18.22	19.56	15.07	16.27
30	15.46	14.36	13.68	18.68	---	20.05	15.04	16.23	18.35	19.64	14.85	16.26
31	15.51	---	14.07	19.07	---	19.48	---	16.24	---	19.63	15.95	---
MEAN		14.34		16.78	18.37	17.92	14.11	15.57	16.92			
MAX		15.16		19.07	19.15	20.37	19.30	16.34	18.35			
MIN		13.57		13.15	17.75	16.03	12.34	13.45	16.21			

TURTLE CREEK BASIN

06341400 TURTLE CREEK NEAR TURTLE LAKE, N. DAK.

LOCATION.--Lat 47°27'30", long 100°55'15", on north line of sec.19, T.146 N., R.80 W., McLean County, on downstream end of twin culverts on State Highway 20, 2.5 mi (4.0 km) downstream from Lake Ordway, and 4 mi (6 km) southwest of Turtle Lake.

DRAINAGE AREA.--310 mi² (803 km²), approximately, of which about 195 mi² (505 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,805 ft (550 m) (from topographic map).

AVERAGE DISCHARGE.--19 years, 0.72 ft³/s (0.0204 m³/s), 522 acre-ft/yr (644,000 m³/yr); median of yearly mean discharges, 0.5 ft³/s (0.014 m³/s), 360 acre-ft/yr (440,000 m³/yr).

EXTREMES.--Current year: Maximum discharge, 610 ft³/s (17.3 m³/s) June 29, gage height, 5.43 ft (1.655 m); no flow for several months.

Period of record: Maximum discharge, 610 ft³/s (17.3 m³/s) June 29, 1975, gage height, 5.43 ft (1.655 m); maximum gage height, 6.2 ft (1.890 m) Mar. 2, 1967 from floodmark, backwater from snow; no flow for long periods each year.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	.02	2.1	1.3	98	.31	
2						0	.01	1.8	1.2	41	.21	
3						0	.01	1.5	1.1	20	.15	
4						0	0	1.4	.95	13	.13	
5						0	0	1.3	.85	9.0	.13	
6						0	0	1.2	.80	7.3	.08	
7						0	0	1.2	.75	6.8	.02	
8						0	0	1.5	.55	5.8	.02	
9						0	.10	1.4	3.8	5.3	.01	
10						0	.20	1.3	8.6	5.3	0	
11						0	.30	1.3	5.3	5.1	0	
12						0	.50	1.3	2.6	4.5	0	
13						0	8.0	1.4	1.6	4.0	0	
14						0	6.0	1.7	1.4	3.4	0	
15						0	6.0	1.5	1.4	2.8	0	
16						0	6.0	1.4	1.3	2.6	0	
17						.20	7.9	1.2	1.2	2.2	0	
18						1.0	6.8	1.4	.95	2.0	0	
19						.40	7.0	1.5	1.2	1.5	0	
20						.10	3.2	1.6	.95	1.4	0	
21						.06	2.8	1.7	.80	1.4	0	
22						.05	2.6	1.6	1.2	1.2	0	
23						.05	2.1	2.7	1.1	1.1	0	
24						.04	1.6	2.5	.90	1.0	0	
25						.04	1.2	2.2	.59	.85	0	
26						.03	1.7	2.0	.37	.67	0	
27						.03	1.6	1.9	.27	.55	0	
28						.02	5.1	1.6	.21	.40	0	
29						.02	5.3	1.5	129	.29	0	
30						.02	3.0	1.4	324	.17	0	
31		---			---	.02	---	1.3	---	.21	0	---
TOTAL	0	0	0	0	0	2.08	79.04	49.4	496.24	248.84	1.06	0
MEAN	0	0	0	0	0	.067	2.63	1.59	16.5	8.03	.034	0
MAX	0	0	0	0	0	1.0	8.0	2.7	324	98	.31	0
MIN	0	0	0	0	0	0	0	1.2	.21	.17	0	0
AC-FT	0	0	0	0	0	4.1	157	98	984	494	2.1	0

CAL YR 1974 TOTAL 410.32 MEAN 1.12 MAX 20 MIN 0 AC-FT 814
WTR YR 1975 TOTAL 876.66 MEAN 2.40 MAX 324 MIN 0 AC-FT 1740

PEAK DISCHARGE (BASE, 10 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-13	--	--	15	6-9	2000	4.07	10
4-19	1100	4.02	13	6-29	2200	5.43	610

06341800 PAINTED WOODS CREEK NEAR WILTON, N. DAK.

LOCATION.--Lat 47°16'30", long 100°47'30", in SW¼SW¼ sec.23, T.144 N., R.80 W., McLean County, on right bank 600 ft (180 m) upstream from county highway bridge, 7 mi (11 km) upstream from Yanktonai Creek, and 8 mi (13 km) north of Wilton.

DRAINAGE AREA.--427 mi² (1,110 km²), approximately, of which about 310 mi² (800 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,760 ft (536 m), from topographic map.

AVERAGE DISCHARGE.--18 years, 7.61 ft³/s (0.216 m³/s), 5,510 acre-ft/yr (6.79 hm³/yr); median of yearly mean discharges, 6.7 ft³/s (0.19 m³/s), 4,900 acre-ft/yr (6.0 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 268 ft³/s (7.59 m³/s) Apr. 18, gage height, 6.09 ft (1.856 m); minimum daily, 0.02 ft³/s (0.001 m³/s) on many days.
Period of record: Maximum discharge, 1,800 ft³/s (51.0 m³/s) Apr. 9, 1969, gage height, 8.12 ft (2.475 m), backwater from ice; maximum gage height, 8.67 ft (2.643 m) Mar. 15, 1966, backwater from ice; no flow for many days each year.

REMARKS.--Records good, except those for winter period which are fair. Records of chemical analyses for the 1975 water year are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.53	.18	.16	.02	.02	.70	76	4.2	24	.52	.03
2	.09	.41	.17	.16	.02	.02	.70	52	3.6	20	.40	.03
3	.09	.31	.18	.16	.02	.02	.70	43	3.2	14	.36	.03
4	.08	.27	.18	.18	.02	.02	.70	35	3.1	11	.48	.03
5	.10	.29	.18	.16	.02	.02	.62	29	2.7	9.5	.40	.03
6	.11	.25	.19	.18	.02	.02	.56	22	2.3	8.7	.27	.04
7	.12	.19	.20	.18	.02	.02	1.4	19	2.2	8.0	.20	.05
8	.13	.15	.15	.18	.02	.02	8.3	19	2.3	6.4	.18	.04
9	.14	.14	.17	.16	.02	.02	2.3	17	8.2	5.5	.16	.03
10	.13	.13	.18	.22	.02	.02	1.3	16	22	4.8	.13	.05
11	.11	.13	.18	.12	.02	.05	1.8	14	20	3.9	.12	.06
12	.12	.15	.19	.08	.02	.10	18	12	16	3.4	.10	.06
13	.13	.18	.22	.07	.02	.20	24	11	14	3.0	.09	.06
14	.13	.19	.21	.07	.02	.40	18	9.9	13	2.6	.10	.07
15	.14	.20	.20	.07	.02	.60	47	9.2	11	2.3	.12	.07
16	.13	.22	.20	.07	.02	1.5	96	8.0	11	1.9	.11	.07
17	.14	.22	.19	.07	.02	2.5	206	7.0	10	1.7	.10	.07
18	.16	.24	.18	.07	.02	3.0	230	6.6	8.8	1.7	.09	.10
19	.16	.24	.17	.08	.02	6.0	195	6.1	8.3	1.2	.08	.58
20	.20	.25	.16	.07	.02	8.0	198	6.1	7.3	.89	.06	.53
21	.22	.30	.15	.07	.02	6.0	170	5.9	6.6	.74	.06	.40
22	.16	.30	.21	.06	.02	5.5	188	5.5	13	.67	.07	.30
23	.16	.27	.23	.07	.02	6.0	162	5.9	23	2.1	.06	.24
24	.15	.28	.22	.08	.04	4.0	114	8.4	15	1.6	.04	.22
25	.13	.26	.19	.07	.04	1.7	79	9.7	11	.94	.02	.20
26	.15	.23	.18	.07	.02	1.2	67	9.2	11	.86	.02	.16
27	.18	.22	.18	.06	.02	.79	76	8.3	8.3	.57	.04	.17
28	.18	.21	.18	.05	.02	1.2	119	7.1	7.0	.44	.04	.20
29	.20	.19	.18	.04	---	.69	181	6.1	7.6	.33	.04	.19
30	.22	.19	.16	.03	---	.63	123	5.3	43	.30	.04	.16
31	.31	---	.16	.02	---	.66	---	4.8	---	.36	.04	---
TOTAL	4.54	7.14	5.72	3.13	.60	50.92	2330.08	494.1	318.7	143.40	4.54	4.27
MEAN	.15	.24	.18	.10	.021	1.64	77.7	15.9	10.6	4.63	.15	.14
MAX	.31	.53	.23	.22	.04	8.0	230	76	43	24	.52	.58
MIN	.07	.13	.15	.02	.02	.02	.56	4.8	2.2	.30	.02	.03
AC-FT	9.0	14	11	6.2	1.2	101	4620	980	632	284	9.0	8.5
CAL YR 1974 TOTAL	2782.39		MEAN 7.62	MAX 200	MIN 0	AC-FT 5520						
WTR YR 1975 TOTAL	3367.14		MEAN 9.23	MAX 230	MIN .02	AC-FT 6680						

PEAK DISCHARGE (BASE, 30 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-12	2245	5.26	84	4-29	0915	5.77	196
4-18	1900	6.09	268	6-30	0645	5.12	62

MISSOURI RIVER MAIN STEM

06342020 MISSOURI RIVER AT PRICE, N. DAK.

LOCATION.--Lat 47°04'47", long 100°55'55", in NW¼ sec.34, T.142 N., R.81 W., Oliver County, on right bank, 0.5 mi (0.8 km) south of Price at mile 1,338 (kilometre 2,153).

DRAINAGE AREA.--185,000 mi² (479,200 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,620.00 ft (493.776 m) above mean sea level (levels by Corps of Engineers). Prior to Sept. 30, 1964, at datum 20 ft (6.096 m) lower.

EXTREMES.--Period of record: Maximum daily gage height recorded, 30.12 ft (9.181 m) Jan. 22, 1967; minimum daily recorded, 17.76 ft (5.413 m) Mar. 31, 1968.

REMARKS.--Stage regulated by Lake Sakakawea. (See station 06338000.)

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.47	22.96	21.83	21.44	27.16	25.82	23.86	22.81	23.82	26.12	27.39	23.88
2	20.60	22.36	---	21.29	26.96	25.71	23.93	22.68	23.80	26.02	27.42	23.90
3	21.30	22.29	22.12	21.94	26.93	25.47	24.17	22.15	23.82	25.97	27.45	23.90
4	22.48	22.49	22.30	21.89	27.20	25.17	24.15	21.17	23.78	25.97	27.48	23.87
5	22.48	22.22	22.25	21.00	27.34	24.27	23.85	20.86	24.07	25.95	27.49	23.86
6	22.29	22.17	22.06	20.79	27.28	24.07	23.76	21.50	24.21	26.09	27.56	23.87
7	22.07	22.09	22.13	21.27	27.24	24.00	23.88	21.79	24.24	26.64	27.60	23.88
8	22.29	22.12	22.08	21.86	27.36	24.95	23.71	22.28	24.27	27.06	27.57	23.90
9	22.29	21.91	22.13	21.30	27.58	25.26	23.92	23.11	24.35	27.12	27.56	23.94
10	22.31	21.33	22.24	20.98	27.44	25.00	23.99	23.56	24.30	27.25	27.56	23.89
11	22.31	21.23	22.09	22.81	27.33	25.06	23.79	23.56	24.21	27.54	27.57	23.97
12	22.37	21.75	22.09	23.53	27.26	25.43	22.26	23.54	24.23	27.59	27.53	23.97
13	22.46	22.05	22.21	25.54	26.86	25.70	20.92	23.16	24.23	27.59	27.50	24.00
14	22.88	21.80	22.23	26.72	26.70	25.76	20.55	22.73	24.22	27.60	27.48	24.03
15	23.03	22.06	22.00	27.04	26.67	25.84	20.45	22.67	24.22	27.60	27.52	24.06
16	23.13	22.17	21.73	26.69	26.29	25.67	19.97	22.64	24.21	27.61	27.48	24.08
17	23.14	21.65	22.38	26.36	26.08	25.50	19.79	23.30	24.21	27.56	---	24.10
18	23.08	21.32	22.23	26.43	26.17	25.78	20.21	23.89	24.18	27.51	---	24.04
19	23.07	21.79	21.95	26.19	26.19	26.06	21.04	23.91	24.22	27.42	---	23.84
20	23.07	21.83	---	26.33	26.28	25.94	21.32	23.97	24.22	27.41	---	23.57
21	23.02	21.95	22.07	26.43	26.26	25.91	20.81	23.90	24.18	27.45	---	23.61
22	22.94	21.84	21.65	26.40	26.14	25.84	21.28	23.84	24.20	27.46	---	23.77
23	23.02	21.85	---	26.55	25.91	25.36	21.53	23.90	24.20	27.42	---	23.96
24	23.05	21.88	21.89	26.70	25.90	24.68	21.30	23.89	24.32	27.36	---	24.07
25	23.11	21.25	21.42	26.67	26.01	25.15	20.59	23.83	24.91	27.41	---	24.10
26	23.16	21.66	20.97	26.77	25.86	25.21	20.83	23.80	25.53	27.38	---	24.05
27	23.10	21.62	21.78	26.86	25.80	23.83	20.44	23.77	25.95	27.35	---	24.02
28	22.95	21.80	21.57	26.91	25.87	23.77	20.10	23.88	25.96	27.42	22.95	24.07
29	23.05	21.51	21.00	26.97	---	24.27	20.70	23.91	25.98	27.41	22.84	24.04
30	23.07	21.88	20.89	27.00	---	24.38	22.13	23.82	26.18	27.45	22.35	23.99
31	23.08	---	21.70	27.20	---	23.96	---	23.84	---	27.46	23.14	---
MEAN	22.60	21.89		24.71	26.65	25.12	21.97	23.15	24.47	27.14		23.94
MAX	23.16	22.96		27.20	27.58	26.06	24.17	23.97	26.18	27.61		24.10
MIN	20.47	21.23		20.79	25.80	23.77	19.79	20.86	23.78	25.95		23.57

SQUARE BUTTE CREEK BASIN

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06342100 SQUARE BUTTE CREEK TRIBUTARY NO. 2 NEAR CENTER, N. DAK.

LOCATION.--Lat 47°06'40", long 101°15'05", in NE¼NE¼ sec.24, T.142 N., R.84 W., Oliver County, on right bank 60 ft (18 m) upstream from county highway bridge, 2.1 mi (3.4 km) southeast of Center.

DRAINAGE AREA.--13.0 mi² (33.7 km²).

PERIOD OF RECORD.--December 1954 to April 1965 (annual maximum only), May 1965 to current year.

GAGE.--Water-stage recorder. Prior to May 1965, crest-stage gage only at site 1,000 ft (300 m) upstream at datum 1.48 ft (0.451 m) higher.

AVERAGE DISCHARGE.--10 years, 1.00 ft³/s (0.0283 m³/s), 724 acre-ft/yr (0.893 hm³/yr); median of yearly mean discharges, 0.84 ft³/s (0.024 m³/s), 610 acre-ft/yr (0.75 hm³/yr).

EXTREMES.--Current year: Maximum discharge, about 20 ft³/s (0.57 m³/s) Apr. 22, gage height, 3.3 ft (1.01 m), from graph based on gage readings, backwater from ice; maximum gage height, 4.02 ft (1.225 m) Apr. 18, backwater from ice and snow; no flow for several months.

Period of record: Maximum discharge, 2,500 ft³/s (70.80 m³/s) July 16, 1957, gage height, 7.98 ft (2.432 m), site and datum then in use; no flow for several months each year.

REMARKS.--Records fair. Flow regulated by Soil Conservation Service dam 1.5 mi (2.4 km) upstream since August 1972; capacity, 1,225 acre-ft (1.51 hm³). Records of chemical analyses for the 1975 water year are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.72				0	0	7.2	1.0	.25	.20	.10
2	0	.45				0	0	4.6	1.1	.25	.13	.10
3	0	.25				0	0	3.7	1.1	.25	.10	.13
4	0	.10				0	0	3.2	1.2	.25	.10	.13
5	0	.03				0	0	2.5	1.2	.25	.10	.13
6	0	.07				0	0	2.4	1.3	.25	.10	.13
7	0	.07				0	.20	2.2	1.3	.25	.07	.13
8	0	.03				0	.30	2.2	1.3	.25	.16	.16
9	0	.02				0	.40	2.2	1.2	.25	.13	.25
10	0	.02				0	.50	1.6	1.8	.25	.13	.25
11	0	.02				0	.70	1.4	.79	.25	.10	.25
12	0	.01				0	.90	1.1	.51	.25	.05	.25
13	0	.01				.20	1.0	.95	.30	.25	.07	.25
14	0	.01				.50	1.0	.95	.30	.30	.10	.25
15	0	.01				1.0	1.0	.79	.30	.35	.13	.25
16	0	.01				2.0	1.2	.58	.30	.30	.16	.25
17	0	.01				2.0	2.0	.51	.35	.30	.16	.30
18	0	.01				1.5	4.0	.58	.40	.30	.07	.40
19	0	.01				1.0	6.0	.58	.45	.35	.07	4.3
20	0	.02				.50	5.0	.65	.51	.20	.10	1.0
21	0	.02				.20	8.0	.65	.51	.16	.13	.40
22	0	.16				.10	18	.72	.51	.10	.16	.30
23	0	.22				.10	12	.72	.51	.20	.20	.25
24	0	.13				0	7.0	.72	.51	.20	.20	.20
25	0	.10				0	4.6	.79	.45	.13	.20	.16
26	0	.05				0	14	.79	.35	.10	.16	.16
27	0	.03				0	12	.87	.30	.07	.13	.20
28	.01	.02				0	17	.87	.30	.05	.13	.20
29	.01	.01				0	15	.95	.25	.02	.13	.25
30	.02	0			---	0	9.9	.95	.25	.02	.13	.20
31	.05	---			---	0	---	1.0	---	.13	.10	---
TOTAL	.09	2.62	0	0	0	9.10	141.70	48.92	20.65	6.53	3.90	11.33
MEAN	.003	.087	0	0	0	.29	4.72	1.58	.69	.21	.13	.38
MAX	.05	.72	0	0	0	2.0	18	7.2	1.8	.35	.20	4.3
MIN	0	0	0	0	0	0	0	.51	.25	.02	.05	.10
AC-FT	.2	5.2	0	0	0	18	281	97	41	13	7.7	22
CAL YR 1974	TOTAL	176.49	MEAN .48	MAX	8.0	MIN 0	AC-FT 350					
WTR YR 1975	TOTAL	244.84	MEAN .67	MAX	18	MIN 0	AC-FT 486					

BURNT CREEK BASIN

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06342450 BURNT CREEK NEAR BISMARCK, N. DAK.

LOCATION.--Lat 46°54'54", long 100°48'48", in SW¼NW¼SW¼ sec.29, T.140 N., R.80 W., Burleigh County, on left bank on upstream side of county highway bridge, 7 mi (11 km) northwest of Bismarck.

DRAINAGE AREA.--108 mi² (280 km²).

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--8 years, 8.30 ft³/s (0.235 m³/s), 6,010 acre-ft/yr (7.41 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 480 ft³/s (13.6 m³/s), Apr. 18, gage height, 11.42 ft (3.481 m) observed, backwater from ice; maximum gage height 12.52 ft (3.816 m) Apr. 16, backwater from ice; no flow for several months.

Period of record: Maximum discharge, 3,000 ft³/s (85.0 m³/s) Apr. 8, 1969, gage height, 14.80 ft (4.511 m); no flow for several days each year.

REMARKS.--Records fair, except for period of ice effect which are poor. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	.05	30	3.0	1.8		
2						0	0	20	2.8	1.4		
3						0	0	16	2.9	1.4		
4						0	0	13	2.8	1.4		
5						0	0	11	2.7	1.3		
6						0	0	9.7	2.6	1.2		
7						0	0	9.2	2.5	.78		
8						0	.10	10	2.8	.58		
9						0	.20	12	6.0	.50		
10						0	.40	10	17	.50		
11						0	.60	9.1	16	.41		
12						0	2.0	8.2	18	.35		
13						0	3.0	7.0	6.6	.28		
14						0	20	6.8	5.4	.25		
15						0	60	6.4	5.1	.20		
16						0	270	6.2	5.4	.20		
17						0	360	5.9	5.3	.18		
18						1.0	420	10	4.6	.15		
19						20	350	13	4.2	.03		
20						70	290	8.6	4.0	0		
21						35	130	6.9	4.2	0		
22						20	98	6.3	5.9	0		
23						15	87	6.9	9.2	.11		
24						10	59	8.8	12	.05		
25						6.0	41	8.8	7.0	0		
26						4.0	84	7.4	4.7	0		
27						2.0	73	6.1	3.0	0		
28						1.0	79	5.2	2.3	0		
29					---	.50	74	4.4	1.7	0		
30					---	.20	47	3.9	1.9	0		
31		---			---	.10	---	3.4	---	0		---
TOTAL	0	0	0	0	0	184.80	2548.35	290.2	171.6	13.07	0	0
MEAN	0	0	0	0	0	5.96	84.9	9.36	5.72	.42	0	0
MAX	0	0	0	0	0	70	420	30	18	1.8	0	0
MIN	0	0	0	0	0	0	0	3.4	1.7	0	0	0
AC-FT	0	0	0	0	0	367	5050	576	340	26	0	0
CAL YR 1974	TOTAL	1655.30	MEAN 4.54	MAX 180	MIN 0	AC-FT 3280						
WTR YR 1975	TOTAL	3208.02	MEAN 8.79	MAX 420	MIN 0	AC-FT 6360						

PEAK DISCHARGE (BASE, 20 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
3-19	--	--	90	4-29	0030	6.58	164
4-18	--	--	480	5-18	2300	4.31	44
4-26	1300	5.89	115	6-10	1300	3.53	20

MISSOURI RIVER MAIN STEM

06342500 MISSOURI RIVER AT BISMARCK, N. DAK.

LOCATION.--Lat 46°48'51", long 100°49'12", in SE¼NW¼SE¼ sec.31, T.139 N., R.80 W., Burleigh County, on left bank 40 ft (12 m) upstream from Bismarck city waterplant, 2,100 ft (640 m) downstream from Burlington Northern Railway bridge, 1.6 mi (2.6 km) northwest of Bismarck Post Office, 3.5 mi (5.6 km) upstream from Heart River and at mile 1,314.5 (kilometre 2,115.0).

DRAINAGE AREA.--186,400 mi² (482,800 km²), approximately.

PERIOD OF RECORD.--October to November 1927, April 1928 to current year. See WSP 1729 or 1917 for history of data prior to April 1928.

GAGE.--Water-stage recorder. Datum of gage is 1,618.38 ft (493.282 m) above mean sea level. See WSP 1729 or 1917 for history of changes prior to Sept. 30, 1937.

AVERAGE DISCHARGE.--47 years (1928-75), 22,100 ft³/s (625.9 m³/s), 16,010,000 acre-ft/yr (19.7 km³/yr).

EXTREMES.--Current year: Maximum discharge, 68,900 ft³/s (1,950 m³/s) July 13, gage height, 14.24 ft (4.340 m); minimum discharge, 7,000 ft³/s (198 m³/s) Oct. 1, gage height, 3.20 ft (0.975 m).
Period of record: Maximum discharge, 500,000 ft³/s (14,200 m³/s) Apr. 6, 1952, gage height, 27.90 ft (8.504 m). Maximum discharge since construction of Garrison Dam in 1953, 68,900 ft³/s (1,950 m³/s) July 13, 1975, gage height, 14.24 ft (4.340 m). Minimum discharge, about 1,800 ft³/s (51.0 m³/s) Jan. 3, 1940; minimum gage height, 1.35 ft (0.411 m) Sept. 4, 1934, present site and datum.
Maximum stage known, 31.6 ft (9.632 m) Mar. 31, 1881 (ice jam), present site and datum.

REMARKS.--Records good. Many diversions from tributaries. Flow regulated by Lake Sakakawea 75.4 mi (121.3 km) upstream. (See station 06338000.) Records of chemical analyses, water temperatures, and suspended sediment loads for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12800	32900	25900	24500	29500	30000	21000	33800	39500	55500	67400	37000
2	21500	30300	24900	22800	28500	29500	22000	34000	39300	55900	66500	40200
3	19800	28400	25700	26500	28300	28000	22000	32500	39300	55300	66700	40000
4	27400	28700	28000	28200	28600	27000	23500	28000	39400	55100	66600	39800
5	29200	29300	27900	25600	30800	23000	22500	23600	39700	55200	66500	39600
6	28500	27500	27200	20900	30800	21000	22000	25500	41400	55100	66700	39300
7	27200	27700	27100	22200	30900	21000	21000	27500	41800	57100	67400	39600
8	28000	27500	27200	26400	30700	26000	21500	28600	42300	62100	67400	39600
9	27800	27200	26500	27500	32300	27500	21500	32600	42900	65000	67100	40400
10	28300	25200	28200	24100	32800	27000	21000	36200	43300	65500	66800	39900
11	28100	22300	27100	23000	32300	28000	21000	38100	42600	67300	67300	40600
12	28300	24400	27000	22000	32700	28500	21000	37900	42300	68600	67400	40600
13	29100	26600	27300	22000	31800	30000	20500	36400	42400	68800	66800	40500
14	30300	27000	27700	22500	30400	30500	21000	33500	42400	68600	66800	40600
15	31700	25900	27200	23000	30500	30500	20500	32000	42300	68700	66900	40700
16	32100	27700	25200	22000	29000	29000	20000	32100	42100	68600	67100	40600
17	32600	26600	26900	22500	28000	28000	19000	32900	42000	68600	66700	40700
18	32500	23200	28500	22000	28000	30000	20500	37500	41800	68400	66500	41100
19	32100	25100	26800	22000	29000	30500	23500	39900	41800	68000	66400	40800
20	32200	25600	26500	22500	30000	30500	25500	40200	41900	67400	62700	37800
21	32000	26100	27300	23000	30500	30000	26000	40600	41800	67200	57500	36800
22	32000	26300	26100	24000	30500	30500	24500	39700	42000	67600	52300	37800
23	31500	25800	22800	25000	29500	28000	27000	40000	41900	67800	47400	38600
24	32200	25900	24800	25500	29500	28500	27500	39900	41700	67000	42900	39600
25	32500	24700	26300	26000	30000	29000	25500	39600	43300	66700	39400	40000
26	32500	24000	21500	26500	30500	28500	23500	39300	47500	67100	36200	40000
27	33000	25100	23900	26500	30000	25000	23000	39100	52200	66600	32400	39500
28	31900	25200	25200	27000	29500	24000	21400	39100	54800	66500	30500	39900
29	32000	24800	22800	27500	---	25000	22900	39800	54700	66600	33200	39800
30	32400	25100	19900	27700	---	22500	27700	39600	55700	67000	30000	39500
31	32500	---	24200	27700	---	21500	---	39400	---	68000	31700	---
TOTAL	914000	792100	803600	758600	844900	848000	679500	1098900	1306100	2002900	1767200	1190900
MEAN	29480	26400	25920	24470	30180	27350	22650	35450	43540	64610	57010	39700
MAX	33000	32900	28500	28200	32800	30500	27700	40600	55700	68800	67400	41100
MIN	12800	22300	19900	20900	28000	21000	19000	23600	39300	55100	30000	36800
AC-FT	1813000	1571000	1594000	1505000	1676000	1682000	1348000	2180000	2591000	3973000	3505000	2362000
CAL YR 1974	TOTAL	9756600	MEAN	26730	MAX	33000	MIN	9000	AC-FT	19350000		
WTR YR 1975	TOTAL	13006700	MEAN	35630	MAX	68800	MIN	12800	AC-FT	25800000		

06343500 EDWARD ARTHUR PATTERSON LAKE NEAR DICKINSON, N. DAK.

LOCATION.--Lat 46°52'11", long 102°49'37", in NE¼NW¼SW¼ sec.8, T.139 N., R.96 W., Stark County, at left edge of spillway, 2 mi (3 km) southwest of Dickinson.

DRAINAGE AREA.--400 mi² (1,040 km²), approximately.

PERIOD OF RECORD.--May 1950 to current year. Prior to October 1958, published as Dickinson Reservoir near Dickinson.

GAGE.--Water-stage recorder. Datum of gage is 2,400.00 ft (731.520 m) above mean sea level (levels by Bureau of Reclamation); gage readings have been reduced to elevations above mean sea level. Prior to Jan. 4, 1961, nonrecording gage at same site and datum.

EXTREMES.--Current year: Maximum contents, 8,790 acre-ft (10.8 hm³) Apr. 22, elevation, 2,418.76 ft (737.238 m); minimum, 4,230 acre-ft (5.22 hm³) Mar. 2, 3, elevation 2,412.87 ft (735.443 m).
Period of record: Maximum contents, 11,180 acre-ft (13.8 hm³) May 9, 1970, elevation, 2,420.81 ft (737.863 m); minimum since initial filling of reservoir, 2,950 acre-ft (3.64 hm³) Mar. 16, 1962, elevation, 2,410.41 ft (734.693 m).

REMARKS.--Reservoir is formed by earthfill dam; storage began May 23, 1950; dam completed Aug. 9, 1950. Total capacity is 24,600 acre-ft (30.3 hm³) at maximum pool, elevation, 2,428.9 ft (740.329 m). Dead storage is 1,000 acre-ft (1.23 hm³) below lowest point of outlet, elevation, 2,404.0 ft (732.739 m). Conservation storage is 5,600 acre-ft (6.90 hm³) between elevation, 2,404.0 ft (732.739 m) and 2,416.5 ft (736.549 m), crest of spillway. Figures given herein represent total contents based on capacity table dated Jan. 1, 1965. The reservoir is for flood control, irrigation, and municipal supply.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30-----	2,413.40	4,540	
Oct. 31-----	2,413.18	4,410	-130
Nov. 30-----	2,413.24	4,440	+30
Dec. 31-----	2,413.20	4,420	-20
CAL YR 1974-----	--	--	-320
Jan. 31-----	2,413.03	4,320	-100
Feb. 28-----	2,412.88	4,240	-80
Mar. 31-----	2,413.30*	4,480	+240
Apr. 30-----	2,418.23	8,240	+3,760
May 31-----	2,416.62	6,770	-1,470
June 30-----	2,416.43	6,620	-150
July 31-----	2,415.83	6,140	-480
Aug. 31-----	2,414.80	5,410	-730
Sept. 30-----	2,414.18	5,010	-400
WTR YR 1975-----	--	--	+470

* From Dickinson Water Plant

HEART RIVER BASIN

06344600 GREEN RIVER NEAR NEW HRADEC, N. DAK.

LOCATION.--Lat 47°01'40", long 103°03'10", Billings County, on left bank below county highway bridge on line between secs.13 and 14, T.141 N., R.98 W., 8 mi (13 km) west of New Hradec.

DRAINAGE AREA.--152 mi² (394 km²), approximately.

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

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--11 years, 19.2 ft³/s (0.544 m³/s), 13,910 acre-ft/yr (17.2 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,900 ft³/s (53.8 m³/s) Apr. 22, gage height, 14.91 ft (4.545 m), minimum, 0.03 ft³/s (0.001 m³/s) Jan. 13-16.
Period of record: Maximum discharge, 4,120 ft³/s (117 m³/s) May 9, 1970, gage height, 16.88 ft (5.145 m); maximum gage height, 16.93 ft (5.160 m) July 5, 1964; no flow at times.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.27	1.7	.70	.50	.50	.50	.55	100	4.0	3.2	.78	.45
2	.33	1.6	.70	.50	.50	.55	.70	34	3.0	2.8	.78	.48
3	.43	1.5	.79	.45	.50	.55	.70	42	2.0	2.8	.83	.44
4	.49	1.5	.80	.45	.45	.55	.70	35	2.0	2.8	.78	.42
5	.56	1.5	.81	.45	.40	.55	.70	31	1.5	2.6	.78	.40
6	.51	1.5	.86	.45	.35	.50	.70	29	1.2	2.4	.83	.38
7	.49	1.5	.86	.40	.30	.50	1.0	34	2.0	2.2	.88	.36
8	.50	1.5	.65	.30	.25	.45	1.0	42	5.0	2.1	.50	.34
9	.50	1.5	.76	.20	.25	.40	1.0	36	10	2.0	.50	.32
10	.53	1.4	.79	.10	.20	.35	1.0	118	50	1.8	.42	.30
11	.49	1.4	.75	.05	.20	.30	1.2	269	31	1.5	.41	.30
12	.48	1.4	.77	.05	.15	.35	1.2	119	21	1.5	.34	.40
13	.47	1.4	.79	.03	.15	.35	1.0	50	18	1.5	.36	.45
14	.44	1.4	.78	.03	.10	.40	1.3	44	16	1.2	.38	.50
15	.46	1.3	.74	.03	.10	.60	9.8	32	19	1.0	.56	.60
16	.49	1.3	.73	.03	.10	1.0	44	30	18	1.1	.85	.75
17	.53	1.3	.65	.05	.10	1.2	189	29	15	1.1	.80	.80
18	.53	1.3	.63	.08	.10	1.7	582	27	13	1.1	.75	.85
19	.60	1.3	.66	.10	.10	2.4	916	30	16	1.1	.80	.90
20	.60	1.3	.69	.25	.15	3.6	1250	35	25	.98	.85	.95
21	.60	1.3	.72	.32	.20	6.1	1240	40	19	.88	.81	.95
22	.56	1.3	.75	.50	.15	4.0	1450	45	16	1.1	.94	.90
23	.60	1.3	.70	.60	.15	1.2	578	50	13	1.3	.88	.90
24	.60	1.2	.65	.60	.35	.80	239	45	12	2.0	.91	.85
25	.56	1.2	.60	.70	.50	.70	127	30	9.0	1.5	.64	.85
26	.56	1.2	.60	.60	.55	.65	143	15	8.3	1.3	.62	.80
27	.56	1.1	.55	.50	.55	.65	224	10	6.4	.98	.66	.80
28	.53	1.0	.55	.50	.50	.55	520	8.0	5.1	.98	.72	.75
29	.56	.90	.55	.50	---	.45	1550	7.0	3.9	.88	.80	.75
30	.56	.80	.50	.50	---	.50	331	6.0	3.7	.78	.60	.75
31	1.0	---	.50	.50	---	.60	---	5.0	---	.78	.51	---
TOTAL	16.39	39.90	21.58	10.32	7.90	33.00	9405.55	1427.0	369.1	49.26	21.27	18.69
MEAN	.53	1.33	.70	.33	.28	1.06	314	46.0	12.3	1.59	.69	.62
MAX	1.0	1.7	.86	.70	.55	6.1	1550	269	50	3.2	.94	.95
MIN	.27	.80	.50	.03	.10	.30	.55	5.0	1.2	.78	.34	.30
AC-FT	33	79	43	20	16	65	18660	2830	732	98	42	37

CAL YR 1974 TOTAL 2919.12 MEAN 8.00 MAX 375 MIN .02 AC-FT 5790
WTR YR 1975 TOTAL 11419.96 MEAN 31.3 MAX 1550 MIN .03 AC-FT 22650

PEAK DISCHARGE (BASE, 100 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-22	0615	14.91	1,900	5-11	1330	8.08	351
4-29	0630	14.85	1,880				

HEART RIVER BASIN

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06345000 GREEN RIVER NEAR GLADSTONE, N. DAK.

LOCATION.--Lat 46°53'40", long 102°37'25", in SW¼ sec.36, T.140 N., R.95 W., Stark County, on right bank
0.5 mi (0.8 km) upstream from county highway bridge, 3.5 mi (5.6 km) northwest of Gladstone, 4.5 mi (7.2 km)
upstream from mouth, and 8 mi (13 km) downstream from Russian Spring Creek.

DRAINAGE AREA.--356 mi² (922 km²).

PERIOD OF RECORD.--October 1945 to September 1975 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 2,311.55 ft (704.560 m) above mean sea level. See WSP 1729
or 1917 for history of changes prior to June 27, 1953.

AVERAGE DISCHARGE.--30 years, 36.9 ft³/s (1.04 m³/s), 26,700 acre-ft/yr (32.9 hm³/yr); median of yearly
mean discharges, 36 ft³/s (1.020 m³/s), 26,100 acre-ft/yr (32 hm³/yr).

EXTREMES.--Current year: Maximum discharge, about 4,000 ft³/s (113 m³/s) Apr. 21, gage height, 14.0 ft (4.27 m),
from high-water mark; possible backwater from ice; minimum daily discharge, 0.40 ft³/s (0.011 m³/s) Mar. 12, 13.
Period of record: Maximum discharge, 5,330 ft³/s (151 m³/s) Mar. 14, 1972, gage height, 16.55 ft
(5.044 m); maximum gage height, 18.3 ft (5.578 m) Apr. 15, 1950, from floodmark, site and datum then in
use; no flow at times in some years.

REMARKS.--Records fair except those for the winter period, which are poor. A few diversions above station
for irrigation of hay meadows and washing of sand and gravel. Records of chemical analyses for the water
year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1917: 1954(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	8.3	5.1	2.4	4.2	1.6	9.0	725	19	11	5.0	2.5
2	1.7	7.3	4.9	2.2	4.0	1.6	9.0	191	18	10	4.5	2.3
3	1.4	6.6	4.5	2.2	3.8	1.5	9.0	130	15	10	3.5	2.2
4	1.4	7.3	4.1	2.2	3.5	1.5	8.5	96	16	10	3.6	1.9
5	2.5	7.3	3.9	2.0	3.2	1.4	8.5	76	14	9.5	4.8	2.1
6	3.4	6.1	3.7	2.0	2.7	1.4	8.0	60	14	9.0	4.7	2.5
7	2.9	5.5	3.9	2.0	2.5	1.2	8.0	59	16	8.5	4.2	2.5
8	2.8	5.3	4.5	1.8	2.2	1.0	8.5	61	16	8.0	4.9	2.5
9	2.9	5.5	4.8	1.6	2.0	.80	8.5	82	23	8.0	4.3	2.3
10	2.6	5.5	5.0	1.4	1.9	.60	8.0	224	33	7.5	5.2	2.2
11	2.8	5.5	4.8	1.2	1.8	.50	7.5	468	41	7.5	9.1	2.2
12	3.2	5.5	4.6	1.0	1.7	.40	7.0	394	76	7.0	7.5	2.2
13	3.4	5.7	4.6	.80	1.6	.40	7.0	202	53	7.0	6.4	2.2
14	3.1	5.5	4.4	.70	1.5	1.0	7.0	110	49	6.5	5.7	2.2
15	2.6	5.5	4.2	.70	1.4	2.0	20	77	44	6.5	5.1	2.3
16	2.1	5.4	4.0	.65	1.3	4.0	150	55	36	6.0	4.5	2.1
17	2.2	5.4	3.8	.65	1.2	6.0	750	45	32	6.0	4.5	2.3
18	2.6	5.4	3.6	.70	1.2	8.0	1800	40	35	5.9	4.5	2.9
19	2.5	5.3	3.6	.80	1.2	10	2700	33	42	5.8	3.9	3.7
20	2.6	5.3	3.4	1.0	1.3	14	3500	32	44	5.8	3.7	3.7
21	2.8	5.2	3.4	2.0	1.4	15	3600	32	49	5.8	3.4	3.6
22	2.5	5.1	3.2	3.0	1.4	14	3840	33	50	5.8	3.1	3.9
23	2.2	5.0	3.2	4.0	1.5	12	2490	34	41	5.9	3.7	3.6
24	2.5	4.9	3.0	5.0	2.0	11	1220	33	28	6.4	3.7	4.1
25	2.5	4.8	3.0	6.0	2.0	10	558	31	22	6.7	3.7	4.5
26	2.6	4.9	2.8	6.0	1.8	10	338	31	22	6.0	3.6	4.3
27	2.9	4.7	2.8	5.6	1.8	9.5	344	26	15	5.8	3.1	5.7
28	2.6	4.9	2.6	5.3	1.6	9.5	1260	27	14	5.4	2.5	6.4
29	2.3	4.5	2.6	5.0	---	9.0	2060	25	13	5.0	2.3	6.1
30	2.6	4.7	2.4	4.7	---	9.0	1970	21	12	4.1	2.3	4.5
31	3.4	---	2.4	4.4	---	9.0	---	21	---	3.4	2.3	---
TOTAL	80.2	167.9	116.8	79.00	57.7	176.90	26713.5	3474	902	215.8	133.3	95.5
MEAN	2.59	5.60	3.77	2.55	2.06	5.71	890	112	30.1	6.96	4.30	3.18
MAX	3.4	8.3	5.1	6.0	4.2	15	3840	725	76	11	9.1	6.4
MIN	1.4	4.5	2.4	.65	1.2	.40	7.0	21	12	3.4	2.3	1.9
AC-FT	159	333	232	157	114	351	52990	6890	1790	428	264	189

CAL YR 1974 TOTAL 5846.04 MEAN 16.0 MAX 433 MIN .02 AC-FT 11600
WTR YR 1975 TOTAL 32212.60 MEAN 88.3 MAX 3840 MIN .40 AC-FT 63890

PEAK DISCHARGE (BASE, 500 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-21	--	--	About 4,000	5-11	0430	4.93	542
4-29	0400	10.38	2,210				

HEART RIVER BASIN

06345500 HEART RIVER NEAR RICHARDTON, N. DAK.

LOCATION.--Lat 46°44'46", long 102°18'27", in NE¼ sec.29, T.138 N., R.92 W., Stark County, on right bank 5 ft (2 m) upstream from bridge on State Highway 8, 0.5 mi (0.8 km) downstream from Plum Creek, and 9.5 mi (15.3 km) south of Richardton.

DRAINAGE AREA.--1,240 mi² (3,210 km²), approximately.

PERIOD OF RECORD.--May 1903 to September 1922, April 1943 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,153.67 ft (656.439 m) above mean sea level. May 18, 1903, to Sept. 30, 1922, nonrecording gage at 3 sites in 1 mi (2 km) reach below present site at different datums. Apr. 14, 1943, to July 7, 1947, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--51 years, 104 ft³/s (2.945 m³/s), 75,350 acre-ft/yr (92.9 hm³/yr); median of yearly mean discharges, 99 ft³/s (2.80 m³/s), 71,700 acre-ft/yr (88 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 8,010 ft³/s (227 m³/s) Apr. 22, gage height, 20.38 ft (6.212 m); maximum gage height, 20.77 ft (6.331 m) Apr. 20, backwater from ice; minimum daily discharge, 0.80 ft³/s (0.023 m³/s) Oct. 7, 9, 15, 22.

Period of record: Maximum discharge, 23,400 ft³/s (663 m³/s) Apr. 16, 1950, gage height, 28.05 ft (8.550 m), from high-water mark in gage well; no flow at times in some years.

Flood of July 5, 1938, reached a stage of about 26 ft (7.9 m), from information by local residents, discharge, 16,000 ft³/s (453 m³/s); flood of Mar. 25, 1943, reached a stage of 24.2 ft (7.38 m) from floodmarks, discharge, 11,700 ft³/s (331 m³/s).

REMARKS.--Records fair. Flow regulated by Edward Arthur Patterson Lake 59 mi (95 km) upstream. (See station 06343500.) Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1209: Drainage area. WSP 1239: 1906, 1918(M), 1947(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	11	7.9	10	5.5	4.5	15	3370	73	40	13	7.6
2	1.6	13	7.9	9.7	5.5	4.5	15	1370	74	38	12	6.9
3	2.0	21	7.8	9.6	5.5	4.5	15	684	71	39	12	6.9
4	1.8	19	8.2	9.5	6.0	5.0	13	452	63	37	12	7.3
5	1.8	16	8.9	9.5	6.0	12	14	340	58	36	12	7.1
6	1.2	14	9.2	9.5	5.5	50	16	270	56	32	12	7.1
7	.80	14	9.2	9.5	5.5	40	23	264	61	31	12	7.1
8	1.0	14	8.7	9.5	5.5	25	23	264	69	30	12	6.9
9	.80	14	9.2	9.5	5.0	20	19	292	85	30	11	6.7
10	1.0	13	10	9.0	4.5	20	19	787	158	29	11	6.4
11	1.1	13	10	8.0	4.0	16	21	1900	140	27	11	6.2
12	1.2	14	10	6.5	3.5	14	22	1850	116	26	10	6.4
13	1.1	13	10	5.0	3.5	14	30	1320	231	24	11	6.4
14	1.0	8.7	10	3.5	3.0	15	30	699	197	24	11	6.4
15	.80	10	11	3.0	3.0	15	31	418	167	23	11	6.4
16	2.2	9.5	11	2.5	2.5	20	60	300	140	23	9.9	6.4
17	2.6	9.4	11	2.0	2.5	25	115	229	107	21	9.4	6.9
18	2.6	9.4	10	2.0	2.5	30	240	189	85	20	8.9	6.9
19	2.8	9.4	10	2.5	2.5	35	770	166	100	18	8.5	7.8
20	2.6	9.4	10	3.0	2.5	45	3860	154	125	18	9.2	8.0
21	1.8	10	10	3.5	2.5	55	6410	150	121	17	9.7	7.8
22	.80	11	11	4.0	2.5	40	7650	146	112	17	9.4	8.7
23	1.6	11	10	4.5	2.5	35	6080	146	111	18	9.2	9.7
24	1.2	7.0	10	4.5	3.0	35	3570	152	106	17	8.9	9.7
25	2.6	10	10	4.5	3.5	35	2000	143	83	16	8.2	9.7
26	3.2	9.5	10	4.5	4.5	35	1620	128	70	16	8.2	9.9
27	3.0	9.3	10	4.5	5.5	20	1010	131	59	16	8.5	11
28	3.2	9.3	10	4.5	4.5	25	2080	105	68	16	8.5	17
29	4.1	9.0	10	5.0	---	20	5270	90	50	15	8.5	45
30	4.9	8.5	10	5.0	---	15	4500	82	42	15	8.5	41
31	5.6	---	10	5.0	---	15	---	75	---	13	8.0	---
TOTAL	63.80	349.4	301.0	182.8	112.5	744.5	45541	16666	2998	742	314.5	307.3
MEAN	2.06	11.6	9.71	5.90	4.02	24.0	1518	538	99.9	23.9	10.1	10.2
MAX	5.6	21	11	10	6.0	55	7650	3370	231	40	13	45
MIN	.80	7.0	7.8	2.0	2.5	4.5	13	75	42	13	8.0	6.2
AC-FT	127	693	597	363	223	1480	90330	33060	5950	1470	624	610
CAL YR 1974 TOTAL	11606.90	MEAN	31.8	MAX	553	MIN	.40	AC-FT	23020			
WTR YR 1975 TOTAL	68322.80	MEAN	187	MAX	7650	MIN	.80	AC-FT	135500			

06346000 LAKE TSCHIDA NEAR GLEN ULLIN, N. DAK.

LOCATION.--Lat 46°35'48", long 101°48'34", in SW¼NE¼ sec.13, T.136 N., R.89 W., Grant County, 10 mi (16 km) upstream from Heart Butte Creek, 14 mi (23 km) north of Elgin.

DRAINAGE AREA.--1,710 mi² (4,430 km²), approximately.

PERIOD OF RECORD.--August 1949 to current year. Prior to October 1957, published as Heart Butte Reservoir near Glen Ullin.

GAGE.--Nonrecording gage. Datum of gage is at mean sea level, levels by Bureau of Reclamation.

EXTREMES.--Current year: Maximum contents, 111,100 acre-ft (137 hm³) May 2, elevation, 2,073.80 ft (632.094 m); minimum, 50,670 acre-ft (62.5 hm³) Oct. 31, elevation, 2,056.39 ft (626.788 m).

Period of record: Maximum contents, 174,000 acre-ft (215 hm³) Apr. 9, 1952, elevation, 2,086.23 ft (635.883 m); minimum since first reaching spillway level, 40,840 acre-ft (50.4 hm³) Mar. 6, 1962, elevation, 2,052.5 ft (625.60 m).

REMARKS.--Reservoir is formed by earthfill dam; storage began Sept. 29, 1949; dam completed Dec. 9, 1949. Total capacity is 430,000 acre-ft (530 hm³) at maximum pool, elevation, 2,118.2 ft (645.627 m). Dead storage is 6,750 acre-ft (8.32 hm³) below lowest point of outlet, elevation, 2,030.0 ft (618.744 m). Active conservation storage is 69,030 acre-ft (85.1 hm³) between elevation 2,030.0 ft (618.744 m) and 2,064.5 ft (629.260 m), crest of spillway. Figures given herein represent total contents. Controlled releases are through 4 by 5 ft (1.219 by 1.524 m) slide gate. The spillway is uncontrolled "glory hole" type and discharges through a conduit 14 ft (4.27 m) in diameter. The reservoir is for flood control, irrigation, and incidental water supply.

COOPERATION.--Record of elevations and contents furnished by Bureau of Reclamation.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30-----	2,056.87	52,010	
Oct. 31-----	2,056.39	50,670	-1,340
Nov. 30-----	2,056.76	51,700	+1,030
Dec. 31-----	2,056.90	52,090	+390
CAL YR 1974-----	--	--	-2,400
Jan. 31-----	2,056.83	51,900	-190
Feb. 28-----	2,056.75	51,680	-220
Mar. 31-----	2,057.46	53,690	+2,010
Apr. 30-----	2,072.95	107,520	+53,830
May 31-----	2,065.50	79,220	-28,300
June 30-----	2,065.40	78,870	-350
July 31-----	2,063.80	73,420	-5,450
Aug. 31-----	2,061.87	67,100	-6,320
Sept. 30-----	2,060.85	63,870	-3,230
WTR YR 1975-----	--	--	+11,860

HEART RIVER BASIN

06347000 ANTELOPE CREEK NEAR CARSON, N. DAK.

LOCATION.--Lat 46°31'50", long 101°38'25", in NW¼NE¼ sec.8, T.135 N., R.87 W., Grant County, on right bank 800 ft (244 m) upstream from county highway bridge, 4 mi (6 km) upstream from mouth and 8 mi (13 km) northwest of Carson.

DRAINAGE AREA.--221 mi² (572 km²).

PERIOD OF RECORD.--June 1948 to September 1975 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 1,974 ft (602 m) by barometer. Prior to June 23, 1958, wire-weight gage at site 800 ft (244 m) downstream at same datum.

AVERAGE DISCHARGE.--27 years, 15.9 ft³/s (0.450 m³/s), 11,520 acre-ft/yr (14.2 hm³/yr); median of yearly mean discharges, 12 ft³/s (0.34 m³/s), 8,700 acre-ft/yr (11 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,400 ft³/s (39.6 m³/s) Apr. 29, gage height, 13.15 ft (4.008 m); minimum daily, 0.20 ft³/s (0.006 m³/s) Feb. 16-26.

Period of record: Maximum discharge, 11,100 ft³/s (314 m³/s) Apr. 16, 1950, gage height, 17.95 ft (5.471 m), former site, from floodmark, from rating curve extended above 1,100 ft³/s (31.2 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

Flood of Mar. 25, 1943 at 17.1 ft (5.21 m), 7,650 ft³/s (217 m³/s), was the highest between 1943 and 1950.

REMARKS.--Records poor. Records of chemical analyses for the 1975 water year are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.38	1.7	1.5	1.3	1.8	.50	2.5	130	12	280	6.9	2.9
2	.56	1.7	1.5	1.3	1.6	.50	2.5	64	11	100	4.9	2.5
3	.62	1.7	1.5	1.3	1.4	.50	2.5	50	9.7	50	3.9	2.2
4	.80	1.6	1.5	1.3	1.2	.50	3.0	47	9.1	30	3.5	2.0
5	.80	1.5	1.5	1.3	1.0	.50	3.2	47	8.4	20	3.4	2.0
6	.80	1.5	1.5	1.3	.90	.50	3.4	43	7.5	100	2.9	1.8
7	.80	1.5	1.5	1.3	.80	.50	3.6	44	7.0	80	2.6	1.7
8	.80	1.5	1.5	1.3	.70	.50	4.4	50	8.3	50	2.4	1.6
9	.80	1.5	1.7	1.3	.60	.50	5.0	150	20	30	2.3	1.4
10	.80	1.3	1.7	1.2	.50	.50	5.2	300	25	18	2.1	1.4
11	.80	1.3	1.7	1.0	.50	.50	5.4	300	25	12	2.0	1.2
12	.80	1.5	1.7	1.0	.50	.50	10	180	22	9.4	2.0	1.0
13	.80	1.5	1.5	1.0	.50	.80	20	98	17	7.6	1.9	.99
14	.74	1.5	1.5	1.0	.40	1.2	30	59	19	6.0	2.2	.91
15	.74	1.7	1.5	1.0	.30	2.0	50	42	20	5.1	3.4	.88
16	.74	1.7	1.5	1.0	.20	10	70	34	19	4.7	3.4	.89
17	.74	1.7	1.5	1.0	.20	12	150	33	21	4.2	3.1	.85
18	.74	1.8	1.3	1.2	.20	11	250	33	20	4.0	2.9	.97
19	.74	1.7	1.3	1.2	.20	9.0	380	28	25	3.7	3.5	1.2
20	.68	1.5	1.3	1.5	.20	8.0	450	24	26	3.4	4.6	1.4
21	.68	1.5	1.3	1.5	.20	7.4	457	30	49	3.2	6.7	1.4
22	.68	1.5	1.3	2.0	.20	6.8	405	27	48	3.1	10	1.4
23	.68	1.5	1.3	3.0	.20	6.2	229	29	31	2.9	48	1.2
24	.68	1.5	1.3	4.0	.20	5.6	133	43	23	2.8	87	1.0
25	.68	1.5	1.3	4.0	.20	4.0	98	66	18	2.7	38	.96
26	.83	1.5	1.3	3.5	.20	3.5	86	41	14	2.7	19	.96
27	1.1	1.5	1.3	3.5	.30	3.5	76	29	11	2.5	11	1.2
28	1.6	1.5	1.3	3.0	.40	3.5	230	21	9.5	2.3	7.4	1.4
29	1.7	1.5	1.3	3.0	---	3.0	700	15	7.5	2.1	5.6	1.7
30	1.7	1.5	1.3	2.5	---	2.5	270	12	195	1.9	4.2	1.6
31	1.7	---	1.3	2.0	---	2.5	---	12	---	2.8	3.5	---
TOTAL	26.71	46.4	44.5	55.8	15.60	108.50	4134.7	2081	738.0	847.1	304.3	42.61
MEAN	.86	1.55	1.44	1.80	.56	3.50	138	67.1	24.6	27.3	9.82	1.42
MAX	1.7	1.8	1.7	4.0	1.8	12	700	300	195	280	87	2.9
MIN	.38	1.3	1.3	1.0	.20	.50	2.5	12	7.0	1.9	1.9	.85
AC-FT	53	92	88	111	31	215	8200	4130	1460	1680	604	85

CAL YR 1974 TOTAL 1217.82 MEAN 3.34 MAX 35 MIN 0 AC-FT 2420
WTR YR 1975 TOTAL 8445.22 MEAN 23.1 MAX 700 MIN .20 AC-FT 16750

PEAK DISCHARGE (BASE, 200 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-20	--	--	600	6-30	2000	9.74	600
4-29	Unknown	13.15	1,400	7-6	Unknown	Unknown	*400
†	Unknown	Unknown	*350				

† May 10 or 11
* About

HEART RIVER BASIN

165

06348000 HEART RIVER NEAR LARK, N. DAK.

LOCATION.--Lat 46°36'37", long 101°22'54", in NW¼NW¼SW¼ sec. 9, T.136 N., R.85 W., Grant County, on right bank 20 ft (6 m) downstream from county highway bridge, 0.6 mi (1.0 km) downstream from Big Muddy Creek, and 10 mi (16 km) north of Lark.

DRAINAGE AREA.--2,750 mi² (7,120 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,802.83 ft (549.503 m) above mean sea level (levels by Corps of Engineers). Prior to Nov. 16, 1948, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--29 years, 218 ft³/s (6.174 m³/s), 157,900 acre-ft/yr (195 hm³/yr); median of yearly mean discharges, 170 ft³/s (4.81 m³/s), 123,000 acre-ft/yr (150 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 7,850 ft³/s (222 m³/s) Apr. 29, gage height, 13.45 ft (4.100 m), minimum daily, 1.0 ft³/s (0.028 m³/s) Feb. 6-16.

Period of record: Maximum discharge, 29,200 ft³/s (827 m³/s) Apr. 17, 1950, gage height, 20.70 ft (6.309 m), from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of contracted-opening measurement of peak flow; no flow Jan. 16 to Mar. 4, 1950, Jan. 17-26, 1962.

REMARKS.--Records poor. Flow regulated by Lake Tschida 45 mi (72 km) upstream. (See station 06346000.) Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	35	14	12	2.0	3.0	15	4700	265	563	156	52
2	36	36	15	12	3.0	3.0	17	3830	243	375	150	44
3	32	26	15	12	4.0	3.0	25	3540	223	268	142	42
4	31	21	15	12	3.0	3.0	40	3370	191	207	132	42
5	23	18	19	12	2.0	3.0	50	3250	181	169	136	42
6	17	16	26	9.0	1.0	3.0	70	3020	167	187	142	42
7	16	15	27	9.0	1.0	3.0	100	2360	156	290	142	45
8	17	14	25	9.0	1.0	3.0	150	2010	147	285	142	48
9	17	13	27	9.0	1.0	3.0	150	1780	183	275	147	46
10	17	13	30	7.0	1.0	3.0	200	1800	510	201	147	46
11	16	13	29	5.0	1.0	3.0	200	2030	630	162	150	43
12	19	12	30	4.0	1.0	3.0	200	2340	399	140	152	41
13	23	13	29	4.0	1.0	6.0	300	2190	340	118	120	42
14	24	12	28	4.0	1.0	10	400	1920	315	101	78	46
15	22	16	29	4.0	1.0	13	400	1770	354	88	83	48
16	18	17	28	4.0	1.0	17	500	1540	450	80	81	48
17	28	14	26	6.0	2.0	20	1000	1360	500	71	77	49
18	35	16	27	6.0	3.0	20	2000	1180	456	69	74	50
19	28	13	24	6.0	3.0	20	2800	1030	462	67	94	54
20	31	15	26	8.0	3.0	19	2960	922	650	66	110	57
21	30	16	26	8.0	3.0	18	3230	840	762	58	71	48
22	28	13	28	10	3.0	17	4080	728	644	45	63	43
23	30	13	30	10	3.0	16	5420	686	507	40	70	42
24	28	13	28	10	3.0	15	4670	678	405	59	104	42
25	23	20	20	9.0	3.0	15	4070	661	332	196	135	41
26	16	14	19	8.0	3.0	15	3850	650	285	175	109	40
27	14	17	18	7.0	3.0	15	3760	524	268	175	78	42
28	12	16	17	6.0	3.0	15	4420	429	211	185	69	43
29	10	14	15	5.0	---	15	7230	372	193	177	62	44
30	14	14	15	4.0	---	15	6890	330	223	167	54	44
31	27	---	15	3.0	---	15	---	298	---	177	51	---
TOTAL	716	498	720	234.0	60.0	332.0	59197	52138	10652	5236	3321	1356
MEAN	23.1	16.6	23.2	7.55	2.14	10.7	1973	1682	355	169	107	45.2
MAX	36	36	30	12	4.0	20	7230	4700	762	563	156	57
MIN	10	12	14	3.0	1.0	3.0	15	298	147	40	51	40
AC-FT	1420	988	1430	464	119	659	117400	103400	21130	10390	6590	2690
CAL YR 1974	TOTAL	17885.0	MEAN	49.0	MAX	298	MIN	10	AC-FT	35470		
WTR YR 1975	TOTAL	134460.0	MEAN	368	MAX	7230	MIN	1.0	AC-FT	266700		

HEART RIVER BASIN

06348490 SWEETBRIAR RESERVOIR NEAR JUDSON, N. DAK.

LOCATION.--Lat 46°51'55", long 101°15'35", in SE4SE4 sec.10, T.139 N., R.84 W., Morton County, on south shore of reservoir 700 ft (210 m) west of spillway and 2.5 mi (4 km) northeast of Judson.

DRAINAGE AREA.--152 mi² (394 km²).

PERIOD OF RECORD.--July 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,900.00 ft (579.120 m) above mean sea level; gage readings have been reduced to elevations above mean sea level.

EXTREMES.--Current year: Maximum contents, 4,220 acre-ft (5.20 hm³) Apr. 29, elevation, 1,942.72 ft (592.141 m); minimum, 2,500 acre-ft (3.08 hm³) Dec. 8, elevation, 1,936.93 ft (590.376 m).
Period of record: Maximum contents, 5,215 acre-ft (6.43 hm³) Apr. 7, 1969, elevation, 1,944.97 ft (592.827 m); minimum since initial filling of reservoir, 2,500 acre-ft (3.08 hm³) Dec. 8, 1974, elevation, 1,936.93 ft (590.376 m).

REMARKS.--Reservoir is formed by an earth-fill dam on Interstate 94; storage began April 1964. Capacity at spillway elevation, 1,940.00 ft (591.312 m) is 3,320 acre-ft (4.09 hm³). Controlled releases are through a 12-inch (0.305 m) pipe. The spillway is an uncontrolled drop-inlet type. Figures herein represent total contents based on capacity table dated June 13, 1967. The reservoir is for recreation.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30-----	1,937.30	2,600	--
Oct. 31-----	1,937.09	2,540	-60
Nov. 30-----	1,936.95	2,510	-30
Dec. 31-----	*1,936.95	2,510	0
CAL YR 1974-----	--	--	-170
Jan. 31-----	*1,937.10	2,550	+40
Feb. 28-----	*1,937.30	2,600	+50
Mar. 31-----	1,937.55	2,660	+60
Apr. 30-----	1,940.73	3,540	+880
May 31-----	1,940.04	3,330	-210
June 30-----	1,940.06	3,340	+10
July 31-----	1,939.65	3,220	-120
Aug. 31-----	1,939.15	3,080	-140
Sept. 30-----	*1,938.80	2,990	-90
WTR YR 1975-----	--	--	+390

* Estimated

LOCATION.--Lat 46°51'06", long 101°15'10", in SW¼ sec.14, T.139 N., R.84 W., Morton County, on right bank 80 ft (24 m) downstream from bridge on county highway, 2 mi (3 km) northeast of Judson, and 16 mi (26 km) upstream from mouth.

PERIOD OF RECORD.--July 1951 to current year.

AVERAGE DISCHARGE.--24 years, 10.9 ft³/s (0.309 m³/s), 7,900 acre-ft/yr (9.74 hm³/yr); median of yearly mean discharges, 8.8 ft³/s (0.25 m³/s), 6,400 acre-ft/yr (7.9 hm³/yr).

Period of record: Maximum discharge, 4,200 ft³/s (119 m³/s) Apr. 7, 1969, gage height, 11.28 ft (3.438 m); no flow at times.

Maximum stage known, 12.5 ft (3.81 m) Apr. 17, 1950, from floodmarks at present site, discharge, 5,910 ft³/s (167 m³/s) from rating curve extended above 2,000 ft³/s (56.6 m³/s) on basis of contracted-opening measurement of peak flow.

REVISIONS (WATER YEARS).--WSP 1439: 1955(M).

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.46	.97	.46	.40	.40	.50	.70	90	1.4	1.6	.48	.25
2	.48	.74	.51	.40	.40	.50	.70	42	1.6	1.6	.41	.26
3	.51	.78	.53	.40	.40	.50	.70	25	1.2	1.3	.41	.29
4	.51	.71	.53	.35	.40	.50	.70	20	2.4	1.2	.39	.28
5	.60	.71	.51	.35	.40	.50	.70	20	2.3	1.2	.39	.25
6	.60	.68	.51	.35	.35	.50	.70	30	1.2	1.2	.39	.28
7	.57	.65	.51	.35	.35	.50	1.2	60	1.1	1.2	.37	.29
8	.57	.63	.46	.35	.30	.50	1.0	90	1.8	.97	.37	.26
9	.57	.63	.51	.35	.30	.50	.80	65	9.0	.65	.39	.24
10	.60	.63	.51	.35	.30	.50	.80	140	69	.57	.41	.24
11	.60	.60	.48	.30	.25	.50	1.5	120	115	.55	.43	.26
12	.60	.55	.48	.35	.25	.50	1.5	80	57	.51	.43	.25
13	.60	.68	.48	.30	.25	.50	.60	50	30	.34	.41	.25
14	.60	.74	.46	.30	.20	.60	1.1	32	22	.26	.43	.25
15	.57	.57	.45	.30	.20	.60	6.0	40	16	.29	.43	.24
16	.57	.55	.45	.30	.20	3.1	5.0	28	12	.28	.41	.24
17	.60	.57	.46	.35	.20	1.3	3.0	19	10	.29	.36	.24
18	.57	.55	.46	.45	.25	.60	600	12	9.0	.34	.36	.26
19	.57	.60	.45	.45	.30	.80	1000	10	11	.36	.36	.34
20	.57	.57	.43	.40	.35	.60	500	7.1	9.0	.41	.34	.28
21	.60	.57	.45	.40	.40	.50	730	4.7	7.9	.45	.34	.24
22	.57	.60	.45	.40	.45	.50	445	3.7	9.4	.53	.32	.24
23	.60	.57	.43	.45	.50	.60	240	5.8	7.1	.97	.31	.24
24	.60	.53	.41	.45	.50	.80	120	4.6	5.5	.68	.28	.22
25	.57	.51	.37	.45	.50	.80	75	5.9	4.3	.60	.26	.22
26	.57	.51	.34	.40	.45	.80	70	3.4	4.7	.57	.28	.22
27	.57	.51	.34	.40	.45	.70	65	2.7	2.2	.53	.29	.29
28	.57	.53	.34	.45	.50	.70	370	2.4	2.1	.53	.28	.31
29	.55	.51	.34	.40	---	.70	870	3.1	1.4	.48	.28	.29
30	.55	.48	.34	.40	---	.70	260	1.7	1.8	.51	.26	.31
31	.89	---	.34	.40	---	.70	---	1.4	---	.55	.28	---
TOTAL	17.96	18.43	13.79	11.75	9.80	21.60	5371.70	1019.5	428.4	21.52	11.15	7.83
MEAN	.58	.61	.44	.38	.35	.70	179	32.9	14.3	.69	.36	.26
MAX	.89	.97	.53	.45	.50	3.1	1000	140	115	1.6	.48	.34
MIN	.46	.48	.34	.30	.20	.50	.60	1.4	1.1	.26	.26	.22
AC-FT	36	37	27	23	19	43	10650	2020	850	43	22	16
CAL YR 1974	TOTAL	1324.40	MEAN	3.63	MAX	111	MIN	20	AC-FT	2630		
WTR YR 1975	TOTAL	6953.43	MEAN	19.1	MAX	1000	MIN	.20	AC-FT	13790		

HEART RIVER BASIN

06349000 HEART RIVER NEAR MANDAN, N. DAK.

LOCATION.--Lat 46°50'02", long 100°58'27", in NW¼NE¼ sec.25, T.139 N., R.82 W., Morton County, on left bank near downstream wingwall of bridge on county highway, 3 mi (5 km) west of Mandan and 4 mi (6 km) downstream from Sweetbriar Creek.

DRAINAGE AREA.--3,310 mi² (8,570 km²), approximately.

PERIOD OF RECORD.--April to September 1924, March 1928 to June 1933, August 1937 to current year. Published as "at Sunny" 1924, 1928-33.

GAGE.--Water-stage recorder. Datum of gage is 1,638.70 ft (499.476 m) above mean sea level, and 1,623.03 ft (494.700 m) above Burlington Northern Railway datum. See WSP 1729 to 1917 for history of changes prior to June 30, 1958.

AVERAGE DISCHARGE.--42 years (1928-32, 1937-75), 256 ft³/s (7.250 m³/s), 185,500 acre-ft/yr (229 hm³/yr); median of yearly mean discharges, 200 ft³/s (5.66 m³/s), 145,000 acre-ft/yr (180 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 8,300 ft³/s (235 m³/s) Apr. 30, gage height, 13.15 ft (4.008 m), maximum gage height, 16.30 ft (4.968 m) Apr. 18, backwater from ice; minimum daily discharge, 3.0 ft³/s (0.085 m³/s) Feb. 15-26.

Period of record: Maximum discharge, about 30,500 ft³/s (864 m³/s) Apr. 19, 1950, gage height, 23.64 ft (7.205 m); maximum gage height, 25.75 ft (7.849 m) Apr. 4, 1952, ice jam; no flow for many days in some years.

REMARKS.--Records fair. Flow regulated by Lake Tschida 105 mi (169 km) upstream since 1949. (See station 06346000.) Some diversions above station. Records of chemical analyses, water temperatures, and suspended sediment loads for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 926: 1938. WSP 1209: Drainage area. WSP 1239: 1924, 1928-29, 1948.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	34	30	18	4.0	4.0	30	6600	309	242	195	71
2	35	35	30	18	4.0	4.0	25	5000	282	387	208	70
3	35	40	30	18	4.0	4.0	25	4400	252	560	178	70
4	35	42	30	16	4.0	4.0	25	4100	235	345	160	66
5	36	42	30	16	4.0	5.0	25	3800	218	285	148	61
6	37	37	28	16	4.0	5.0	25	3600	198	248	132	58
7	38	33	28	16	4.0	5.0	30	3000	198	240	135	60
8	34	32	28	14	4.0	5.0	40	2400	245	285	140	60
9	30	29	28	14	3.5	5.0	50	2120	285	306	152	61
10	27	28	28	12	3.5	5.0	60	1970	315	306	142	62
11	26	27	26	10	3.5	5.0	70	2130	568	276	155	60
12	26	26	26	8.0	3.5	5.0	80	2400	1000	232	178	58
13	26	26	26	6.0	3.5	6.0	100	2580	576	205	165	60
14	28	26	26	5.0	3.5	7.0	110	2410	471	180	172	57
15	28	26	26	5.0	3.0	8.0	200	2180	436	155	150	57
16	30	28	24	5.0	3.0	15	400	2000	429	135	101	57
17	30	28	24	5.0	3.0	60	1000	1740	506	125	90	57
18	30	28	24	5.0	3.0	70	3000	1480	600	103	86	61
19	32	28	24	5.0	3.0	60	3600	1230	592	92	88	66
20	32	28	24	5.0	3.0	50	4400	1030	548	86	92	67
21	34	30	22	4.5	3.0	50	4200	854	740	82	110	67
22	34	30	22	4.5	3.0	45	4500	724	1060	79	128	68
23	36	30	22	4.5	3.0	45	5300	676	868	86	88	66
24	36	30	22	4.5	3.0	40	5400	612	656	70	79	58
25	35	30	22	4.5	3.0	35	4800	604	506	61	74	53
26	34	32	20	4.5	3.0	35	4700	588	408	53	108	52
27	34	32	20	4.5	3.5	35	4400	608	342	162	152	55
28	33	32	20	4.5	4.0	35	5200	506	306	170	120	57
29	30	32	20	4.5	---	35	7300	429	270	170	99	58
30	28	32	20	4.5	---	35	8200	380	248	175	84	57
31	29	---	20	4.5	---	30	---	339	---	190	78	---
TOTAL	992	933	770	266.5	96.5	752.0	67295	62490	13667	6091	3987	1830
MEAN	32.0	31.1	24.8	8.60	3.45	24.3	2243	2016	456	196	129	61.0
MAX	38	42	30	18	4.0	70	8200	6600	1060	560	208	71
MIN	26	26	20	4.5	3.0	4.0	25	339	198	53	74	52
AC-FT	1970	1850	1530	529	191	1490	133500	123900	27110	12080	7910	3630
CAL YR 1974	TOTAL	22347.0	MEAN	61.2	MAX	350	MIN	20	AC-FT	44330		
WTR YR 1975	TOTAL	159170.0	MEAN	436	MAX	8200	MIN	3.0	AC-FT	315700		

MISSOURI RIVER MAIN STEM

169

06349070 MISSOURI RIVER BELOW MANDAN, N. DAK.

LOCATION.--Lat 46°44'32", long 100°49'54", at midsection of west half sec.30, T.138 N., R.80 W., Morton County, on right bank 1 mi (2 km) south of Fort Lincoln State Park and 6 mi (10 km) southeast of Mandan at mile 1,309 (kilometre 2,106).

DRAINAGE AREA.--189,800 mi² (491,600 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft (487.680 m) above mean sea level (Corps of Engineers bench mark).

EXTREMES.--Period of record: Maximum daily gage height recorded, 29.71 ft (9.056 m) Mar. 17, 1972; minimum daily recorded, 17.40 ft (5.304 m) Apr. 1, 1968.

REMARKS.--Stage regulated by Lake Sakakawea. (See station 06338000.)

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.86	24.57	---	---	---	---	26.44	---	25.43	27.71	28.86	25.71
2	21.95	24.13	---	---	---	---	26.41	---	25.39	27.64	28.83	25.89
3	21.66	23.72	---	---	---	---	26.48	---	25.39	27.60	---	25.92
4	23.15	23.76	---	---	---	26.68	26.72	---	25.38	27.57	---	25.87
5	23.63	23.90	---	---	---	26.16	26.48	---	25.47	27.57	---	25.92
6	23.54	23.53	---	---	---	25.45	26.26	---	25.71	27.58	---	25.81
7	23.32	23.53	---	---	---	25.29	26.26	---	25.79	27.92	---	25.81
8	23.43	23.47	---	---	---	25.58	26.13	---	25.88	28.42	---	25.77
9	23.46	23.45	---	---	---	26.31	26.03	---	25.99	28.62	---	25.87
10	23.53	23.08	---	---	---	26.38	26.11	25.13	26.01	28.68	---	25.78
11	23.53	22.50	---	---	27.91	26.27	25.85	25.37	25.95	28.93	---	25.81
12	23.56	---	---	---	27.85	---	25.56	25.33	25.98	29.01	---	25.83
13	23.68	---	---	---	27.60	---	25.29	25.27	25.97	29.03	29.05	25.82
14	23.92	---	---	---	27.22	---	24.87	24.82	25.97	29.02	29.11	25.84
15	24.23	---	---	---	27.18	---	23.72	24.51	25.97	29.04	29.18	25.86
16	24.33	---	---	---	26.93	---	23.27	24.43	25.94	29.06	29.21	25.86
17	24.45	---	---	---	26.65	---	---	24.53	25.94	29.07	29.19	25.87
18	24.44	---	---	---	---	---	---	25.24	25.94	29.03	29.22	25.81
19	24.37	---	---	---	---	---	---	25.52	25.96	28.98	29.22	25.87
20	24.41	---	---	---	---	---	---	25.54	25.96	28.93	28.91	25.54
21	24.36	---	---	---	---	---	---	25.61	25.95	28.94	28.47	25.37
22	24.30	---	---	---	---	27.80	---	25.49	26.00	28.96	28.05	25.47
23	23.81	---	---	---	---	28.22	---	25.55	25.98	28.96	27.55	25.57
24	24.16	---	22.95	---	---	27.60	---	25.56	25.94	28.87	26.87	25.71
25	23.86	---	23.18	---	---	27.40	---	25.49	26.23	28.87	26.38	25.79
26	24.03	---	22.29	---	---	27.68	---	25.45	26.77	28.82	25.95	25.80
27	24.48	---	---	---	---	27.32	---	25.42	27.31	28.69	25.31	25.74
28	24.17	---	---	---	---	26.38	---	25.43	27.54	28.71	24.87	25.79
29	24.41	---	---	---	---	26.38	---	25.51	27.50	28.76	25.21	25.80
30	24.47	---	---	---	---	26.84	---	25.46	27.68	28.88	24.68	25.76
31	24.52	---	---	---	---	26.75	---	25.44	---	28.97	24.83	---
MEAN	23.71	---	---	---	---	---	---	---	26.10	28.61	---	25.77
MAX	24.52	---	---	---	---	---	---	---	27.68	29.07	---	25.92
MIN	19.86	---	---	---	---	---	---	---	25.38	27.57	---	25.37

APPLE CREEK BASIN

06349500 APPLE CREEK NEAR MENOKEN, N. DAK.

LOCATION.--Lat 46°47'40", long 100°39'25", in NW¼NE¼ sec.9, T.138 N., R.79 W., Burleigh County, on left bank 75 ft (23 m) downstream from bridge on county highway, 4 mi (6 km) upstream from Hay Creek, 6.3 mi (10.1 km) west of Menoken, and 6.4 mi (10.3 km) east of Bismarck.

DRAINAGE AREA.--1,680 mi² (4,350 km²), approximately, of which about 500 mi² (1,300 km²) is probably non-contributing.

PERIOD OF RECORD.--March to June 1905, October 1945 to current year. Published as "near Bismarck" 1905.

GAGE.--Water-stage recorder. Datum of gage is 1,638.61 ft (499.448 m) above mean sea level. See WSP 1729 or 1917 for history of changes prior to Sept. 30, 1953.

AVERAGE DISCHARGE.--30 years, 34.4 ft³/s (0.974 m³/s), 24,920 acre-ft/yr (30.7 hm³/yr); median of yearly mean discharges, 19 ft³/s (0.54 m³/s), 13,800 acre-ft/yr (17 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 750 ft³/s (21.2 m³/s) Apr. 20, gage height, 12.00 ft (3.658 m); minimum daily, 0.01 ft³/s (0.000 m³/s) Oct. 16, 17.
Period of record: Maximum discharge, 6,750 ft³/s (191 m³/s) Apr. 18, 1950, gage height, 17.07 ft (5.203 m); no flow at times in some years.

REMARKS.--Records good except those for the winter period, which are poor. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1209: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.41	.60	.90	.05	.25	1.0	267	25	29	4.5	.77
2	.04	.39	.60	.90	.05	.25	1.0	201	23	27	3.8	.77
3	.03	.33	.60	.90	.05	.25	1.0	150	21	26	3.4	.59
4	.04	.36	.70	.90	.05	.25	1.0	124	36	24	2.6	.54
5	.03	.26	.80	.90	.05	.25	1.0	106	37	23	2.0	.49
6	.04	.25	1.0	.80	.05	.25	1.1	93	40	20	1.7	.39
7	.03	.26	.90	.70	.05	.25	1.2	88	31	18	1.4	.39
8	.03	.24	1.0	.60	.05	.25	1.3	82	27	15	.90	.35
9	.04	.18	1.8	.60	.05	.20	1.4	75	36	13	.72	.27
10	.04	.32	1.9	.40	.05	.20	1.5	70	43	13	.89	.19
11	.03	.06	2.0	.05	.05	.20	2.0	66	61	11	.82	.23
12	.02	.13	1.9	.05	.05	.20	3.0	63	56	9.8	.54	.27
13	.02	.22	1.8	.05	.05	.20	4.0	60	48	9.0	.44	.27
14	.02	.25	1.6	.05	.05	.30	5.0	59	48	9.0	.51	.23
15	.02	.23	1.6	.05	.05	.50	10	55	46	8.1	.57	.19
16	.01	.24	1.5	.05	.05	1.0	45	50	39	7.5	.50	.19
17	.01	.26	1.5	.10	.05	2.0	130	48	34	7.2	.49	.15
18	.03	.22	1.4	.10	.05	4.0	300	45	33	6.8	.43	.23
19	.03	.21	1.3	.10	.10	5.5	470	42	35	6.3	.42	.23
20	.30	.24	1.3	.10	.10	5.3	712	40	32	5.9	.38	.12
21	.09	.22	1.2	.10	.10	5.0	711	36	29	5.0	.37	.15
22	.06	.23	1.2	.10	.10	4.0	616	34	29	5.4	.40	.19
23	.10	.41	1.2	.10	.20	3.5	359	36	28	6.3	.74	.28
24	.08	.36	1.1	.10	.20	3.0	258	39	27	6.0	.74	.49
25	.24	.41	1.1	.10	.20	2.0	208	38	32	5.8	.91	.67
26	.03	.51	1.1	.05	.25	1.7	212	38	34	5.2	1.1	.74
27	.06	.65	1.1	.05	.25	1.7	318	38	35	4.9	1.1	.84
28	.08	.69	1.1	.05	.25	1.7	533	36	33	4.6	.84	.97
29	.11	.68	1.0	.05	---	1.5	671	34	30	4.1	.84	1.1
30	.10	.60	1.0	.05	---	1.3	392	31	34	3.4	.98	1.0
31	.27	---	1.0	.05	---	1.0	---	28	---	3.2	.84	---
TOTAL	2.07	9.82	37.90	9.10	2.65	48.00	5970.5	2172	1062	342.5	35.87	13.29
MEAN	.067	.33	1.22	.29	.095	1.55	199	70.1	35.4	11.0	1.16	.44
MAX	.30	.69	2.0	.90	.25	5.5	712	267	61	29	4.5	1.1
MIN	.01	.06	.60	.05	.05	.20	1.0	28	21	3.2	.37	.12
AC-FT	4.1	19	75	18	5.3	95	11840	4310	2110	679	71	26
CAL YR 1974	TOTAL	3433.71	MEAN	9.41	MAX	120	MIN	.01	AC-FT	6810		
WTR YR 1975	TOTAL	9705.70	MEAN	26.6	MAX	712	MIN	.01	AC-FT	19250		

PEAK DISCHARGE (BASE, 200 FT³/S).--Apr. 20 (1030) 750 FT³/S (12.00 FT); Apr. 29 (0200) 710 FT³/S (11.73 FT).

06349700 MISSOURI RIVER NEAR SCHMIDT, N. DAK.

LOCATION.--Lat 46°39'22", long 100°44'18", in sec.26, T.137 N., R.80 W., Morton County, on right bank 2 mi (3 km) southeast of railroad siding in Schmidt and 13 mi (21 km) southeast of Mandan at mile 1,298 (kilometre 2,088).

DRAINAGE AREA.--191,700 mi² (496,500 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft (487.680 km) above mean sea level.

EXTREMES.--Period of record: Maximum daily gage height recorded, 22.46 ft (6.845 m) Aug. 19, 1975; minimum daily recorded, 7.92 ft (2.414 m) May 30, 1967.

REMARKS.--Stage regulated by Lake Sakakawea. (See station 06338000.) Records of chemical analyses and water temperatures for the water year 1975 are published in Section 2 of this report.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.79	16.73	15.45	15.99	20.24	19.43	18.32	17.57		---	22.25	19.72
2	14.14	16.46	15.36	16.05	20.16	19.42	18.23	17.71		---	22.20	19.90
3	13.92	15.91	15.29	16.80	19.97	19.35	18.34	17.48		---	22.19	19.84
4	15.27	15.85	15.74	17.59	19.88	19.14	18.59	16.91		---	22.15	19.77
5	16.07	16.04	15.93	17.90	20.08	18.75	18.53	16.17		---	22.20	19.71
6	16.08	15.72	15.88	17.37	20.21	17.98	18.31	16.26		---	22.34	19.63
7	15.87	15.68	15.78	17.42	20.19	17.68	18.33	16.50		---	22.41	19.62
8	15.80	15.64	15.82	---	20.12	17.79	18.27	16.64		21.21	22.33	19.67
9	15.90	15.64	15.68	---	20.25	18.59	18.09	17.07		21.49	22.27	19.73
10	16.00	15.34	15.82	---	20.41	18.88	18.17	17.70		21.60	22.31	19.54
11	15.98	14.68	15.84	---	20.35	18.70	18.30	18.07		21.80	22.37	19.53
12	15.98	14.87	15.78	---	20.31	18.82	18.35	18.16		21.97	22.33	19.54
13	16.08	15.39	15.78	---	20.21	19.17	18.38	18.16		22.06	22.32	19.52
14	16.24	15.64	15.89	---	19.90	19.37	18.28	17.82		22.12	22.32	19.44
15	16.51	15.40	15.87	---	19.77	19.51	18.49	17.48		22.14	22.34	19.46
16	16.64	15.73	15.52	---	19.68	19.69	18.04	17.45		22.21	22.36	19.41
17	16.73	15.75	15.52	---	19.41	19.65	16.03	17.38		22.27	22.35	19.41
18	16.72	15.12	15.94	---	19.25	19.58	15.29	17.92		22.25	22.43	19.24
19	16.65	15.14	15.82	---	19.32	19.82	15.60	18.34		22.25	22.46	19.22
20	16.65	15.42	15.57	20.29	19.41	20.05	16.20	18.37		22.20	22.29	18.98
21	16.64	15.53	15.79	20.19	19.52	20.09	16.31	18.47		22.19	22.02	18.79
22	16.58	15.61	15.65	20.19	19.57	20.12	16.32	18.39		22.21	21.76	18.79
23	16.47	15.54	15.05	20.10	19.45	19.81	16.61	18.42		22.23	21.48	18.87
24	16.56	15.52	15.08	20.12	19.34	19.25	16.76	18.46		22.16	20.98	18.99
25	16.60	15.46	15.67	20.16	19.31	18.88	16.31	18.38		22.14	20.52	19.08
26	16.64	14.95	15.20	20.10	19.42	19.30	16.02	18.35		22.12	20.23	19.07
27	16.70	15.26	15.08	20.10	19.34	19.26	15.90	18.36		22.10	19.91	18.96
28	16.58	15.30	15.49	20.10	19.33	18.30	15.64	18.33		22.14	19.48	18.98
29	16.51	15.34	15.15	20.09	---	18.07	16.01	18.39		22.20	19.67	19.01
30	16.58	15.19	14.50	20.10	---	18.55	16.70	18.38		22.29	19.25	---
31	16.66	---	15.01	20.07	---	18.62	---	18.34		22.28	19.29	---
MEAN	16.05	15.53	15.55		19.80	19.08	17.29	17.79			21.64	
MAX	16.73	16.73	15.94		20.41	20.12	18.59	18.47			22.46	
MIN	11.79	14.68	14.50		19.25	17.68	15.29	16.17			19.25	

CANNONBALL RIVER BASIN

06349930 COAL BANK CREEK NEAR HAVELOCK, N. DAK.

LOCATION---Lat 46°27'50", long 102°44'20", in NW¼SW¼ sec.34, T.13S N., R.96 W., Hettinger County, one mile south of Havelock at county highway bridge.

DRAINAGE AREA--70.0 mi² (181.3 km²).

PERIOD OF RECORD--October 1974 to current year.

GAGE--Water-stage recorder. Altitude of gage is 2,505 ft (764 m) above mean sea level from topographic map.

EXTREMES--Current year: Maximum discharge, 1,400 ft³/s (39.5 m³/s) May 9, gage height, 10.15 ft (3.094 m), no flow for several days.
Period of record: Maximum discharge, 1,400 ft³/s (39.5 m³/s) May 9, 1975, gage height, 10.15 ft (3.094 m), no flow at times.

REMARKS--Records fair. Records of chemical analyses and suspended sediment loads for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.06	.05	.03	0	0	44	1.5	52	.19	.10	.10
2	.05	.06	.05	.03	0	0	22	1.5	26	.16	.08	.08
3	.05	.06	.05	.03	0	0	13	1.4	8.7	.11	.07	.07
4	.05	.06	.05	.03	0	0	8.7	1.3	4.9	.10	.08	.08
5	.05	.06	.05	.03	0	0	6.6	1.2	3.7	.11	.08	.08
6	.05	.06	.05	.02	0	0	6.8	1.2	3.0	.11	.10	.10
7	.05	.06	.05	.02	0	0	123	1.1	2.3	.11	.10	.10
8	.05	.06	.05	.02	0	0	32	1.1	1.8	.09	.10	.10
9	.05	.06	.04	.02	0	0	564	1.4	1.5	.09	.10	.10
10	.05	.06	.04	.01	0	0	885	1.5	1.2	.09	.11	.11
11	.05	.06	.04	0	0	0	330	1.4	1.0	.09	.11	.11
12	.05	.06	.04	0	0	0	45	1.4	.97	.08	.11	.11
13	.05	.06	.04	0	.10	0	18	1.5	.87	.08	.13	.13
14	.05	.06	.04	0	.50	0	12	1.7	.74	.11	.15	.15
15	.05	.06	.04	0	.80	10	7.6	1.6	.66	.16	.15	.15
16	.05	.06	.04	0	1.0	25	6.0	1.4	.64	.14	.16	.16
17	.05	.06	.04	0	.80	50	4.8	1.3	.60	.13	.15	.15
18	.05	.06	.04	0	.70	100	4.0	1.2	.53	.13	.13	.13
19	.05	.06	.04	0	.60	150	3.5	1.8	.62	.13	.15	.15
20	.05	.06	.04	0	.50	300	3.6	1.7	.56	.13	.16	.16
21	.05	.06	.04	0	.40	230	3.6	1.8	.49	.13	.17	.17
22	.05	.06	.04	0	.30	200	3.8	2.0	.46	.13	.17	.17
23	.05	.06	.04	0	.20	96	4.8	2.1	.45	.16	.17	.17
24	.05	.06	.04	0	.10	60	5.4	1.7	.43	.13	.17	.17
25	.05	.06	.04	0	0	65	5.4	1.4	.42	.10	.18	.18
26	.05	.06	.03	0	0	72	3.4	1.4	.38	.10	.17	.17
27	.05	.06	.03	0	0	52	3.1	1.3	.36	.10	.19	.19
28	.05	.06	.03	0	0	687	2.9	1.1	.34	.10	.21	.21
29	.05	.06	.03	0	---	600	2.3	1.1	.28	.10	.20	.20
30	.05	.05	.03	0	---	127	1.9	.65	.23	.10	.16	.16
31	.05	---	.03	0	---	0	1.7	---	.22	.10	---	---
TOTAL	1.55	1.79	1.26	.24	0	6.00	2824	2177.9	107.1	116.35	3.59	4.11
MEAN	.050	.060	.041	.008	0	.19	94.1	70.3	3.57	3.75	.12	.14
MAX	.05	.06	.05	.03	0	1.0	687	885	65	52	.19	.21
MIN	.05	.05	.03	0	0	0	0	1.7	1.1	.22	.08	.07
AC-FT	3.1	3.6	2.5	.5	0	12	5600	4320	212	231	7.1	8.2

WTR YR 1975 TOTAL 5243.89 MEAN 14.4 MAX 885 MIN 0 AC-FT 10400

PEAK DISCHARGE (BASE, 100 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-20	--	--	350	5-10	2400	10.15	1,400
4-28	1900	9.90	1,200	6-30	1600	5.89	121
5-7	0800	6.76	218				

06350000 CANNONBALL RIVER AT REGENT, N. DAK.

LOCATION.--Lat 46°25'36", long 102°33'05", in NE¼NE¼ sec.13, T.134 N., R.95 W., Hettinger County, on right bank 400 ft (120 m) upstream from bridge on county highway 0.3 mi (0.5 km) north of Regent.

DRAINAGE AREA.--580 mi² (1,500 km²), approximately.

PERIOD OF RECORD.--September 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,422.90 ft (738.500 m) above mean sea level.

AVERAGE DISCHARGE.--25 years, 45.6 ft³/s (1.291 m³/s), 33,040 acre-ft/yr (40.7 hm³/yr); median of yearly mean discharges, 27 ft³/s (0.76 m³/s), 19,600 acre-ft/yr (24 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 3,650 ft³/s (103 m³/s) Apr. 29, gage height, 13.00 ft (3.962 m); maximum gage height, 13.08 ft (3.987 m) Apr. 21, backwater from ice; minimum daily discharge, 1.0 ft³/s (0.028 m³/s) Jan. 12, 13, Feb. 14-17.
Period of record: Maximum discharge, 7,430 ft³/s (210 m³/s) Mar. 12, 1972, gage height, 19.49 ft (5.941 m), from floodmark, backwater from ice; no flow at times.
Maximum stage known since 1914, 26.1 ft (7.96 m) Apr. 16, 1950, from floodmarks, discharge, 20,300 ft³/s (575 m³/s), on basis of slope-area measurement at site 4 mi (6 km) downstream.

REMARKS.--Records good except those for the winter period, which are fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	5.5	3.0	2.9	2.2	4.5	22	846	31	89	5.1	3.7
2	2.4	6.2	3.0	2.9	2.2	4.0	18	408	30	74	4.7	3.7
3	2.2	6.0	3.0	3.0	2.2	3.5	15	270	28	42	4.2	3.7
4	2.4	5.5	3.0	2.9	2.2	3.5	20	190	24	26	4.4	3.7
5	2.4	5.3	3.2	2.9	2.0	4.0	23	139	24	22	4.9	3.7
6	2.5	4.9	3.4	2.9	2.0	4.0	23	119	23	21	4.9	3.7
7	2.5	4.7	3.5	2.7	2.0	3.6	28	423	22	21	4.7	3.7
8	2.7	4.4	3.4	2.7	1.8	3.4	33	503	21	21	4.5	3.5
9	2.9	4.4	3.0	2.5	1.5	3.2	29	1340	27	21	4.0	3.5
10	2.9	4.4	3.4	2.0	1.5	3.0	24	2930	33	20	3.8	3.5
11	3.0	4.2	3.5	1.5	1.5	3.0	23	2580	34	18	4.2	3.4
12	3.2	4.0	3.5	1.0	1.5	3.0	20	1170	32	16	4.2	3.0
13	3.7	4.0	3.7	1.0	1.3	3.0	18	573	32	15	4.4	3.4
14	3.4	4.0	3.8	1.2	1.0	3.2	22	298	34	14	5.1	3.4
15	3.4	4.5	3.5	1.5	1.0	3.4	36	201	45	17	5.5	3.2
16	3.5	4.2	3.5	1.5	1.0	4.0	107	141	42	15	5.7	3.2
17	3.4	4.2	3.2	1.8	1.0	4.9	226	114	37	14	5.7	5.3
18	3.2	4.2	3.4	2.5	1.2	5.5	263	92	33	14	5.7	6.4
19	3.2	4.2	2.7	3.0	1.4	11	937	75	32	14	5.7	5.5
20	3.2	4.2	2.7	3.5	1.5	18	1860	69	32	12	5.5	5.5
21	3.4	4.2	2.9	3.8	2.0	16	2350	65	32	11	5.1	5.5
22	3.4	4.2	3.2	4.0	2.5	15	1850	61	30	10	4.9	5.5
23	3.4	4.4	3.2	4.0	3.0	14	1380	65	29	9.2	4.5	5.5
24	3.5	3.8	3.2	4.5	4.0	12	735	71	41	8.9	4.4	5.5
25	3.5	3.8	2.9	4.5	5.0	10	545	73	39	7.2	4.2	5.7
26	3.4	3.7	2.5	4.0	5.5	10	638	64	34	6.9	4.0	6.2
27	3.5	3.2	2.4	3.5	5.0	10	456	55	33	6.6	3.8	6.9
28	3.5	3.5	2.4	3.0	4.5	11	1860	49	32	6.0	3.7	7.7
29	3.5	3.4	2.4	2.5	---	12	2830	42	32	4.5	3.5	7.7
30	4.0	3.2	2.4	2.2	---	15	2170	38	32	4.2	3.4	7.7
31	5.5	---	2.7	2.2	---	20	---	34	---	4.7	3.5	---
TOTAL	99.4	130.4	95.6	84.1	63.5	240.7	18561	13098	950	585.2	141.9	142.6
MEAN	3.21	4.35	3.08	2.71	2.27	7.76	619	423	31.7	18.9	4.58	4.75
MAX	5.5	6.2	3.8	4.5	5.5	20	2830	2930	45	89	5.7	7.7
MIN	2.2	3.2	2.4	1.0	1.0	3.0	15	34	21	4.2	3.4	3.0
AC-FT	197	259	190	167	126	477	36820	25980	1880	1160	281	283
CAL YR 1974 TOTAL	2524.11			MEAN 6.92	MAX 40	MIN .41	AC-FT 5010					
WTR YR 1975 TOTAL	34192.40			MEAN 93.7	MAX 2930	MIN 1.0	AC-FT 67820					

PEAK DISCHARGE (BASE, 400 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-21	--	--	2,400	5-11	0130	12.48	3,310
4-29	0200	13.00	3,650				

06351000 CANNONBALL RIVER BELOW BENTLEY, N. DAK.

LOCATION.--Lat 46°21'30", long 102°02'30", in SW¼SW¼ sec.6, T.133 N., R.90 W., Grant County, on left bank 0.25 mi (0.4 km) downstream from Thirty Mile Creek, 2 mi (3 km) northeast of Bentley.

DRAINAGE AREA.--1,140 mi² (2,950 km²), approximately.

PERIOD OF RECORD.--April 1943 to current year. Published as "near New Leipzig" 1943 to June 1952. Records published for both sites October 1951 to June 1952.

GAGE.--Water-stage recorder at present site and datum since Oct. 1, 1951. Datum of gage is 2,252.09 ft (686.437 m) above mean sea level. Prior to Nov. 7, 1947, nonrecording gage and Nov. 7, 1947, to June 16, 1952, water-stage recorder, at site 8 mi (13 km) downstream at different datum.

AVERAGE DISCHARGE.--32 years, 88.5 ft³/s (2.506 m³/s), 64,120 acre-ft/yr (79.1 hm³/yr); median of yearly mean discharges, 69 ft³/s (1.95 m³/s), 50,000 acre-ft/yr (62 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 5,180 ft³/s (147 m³/s) Apr. 30, gage height, 14.81 ft (4.514 m); minimum daily, 2.0 ft³/s (0.057 m³/s) Jan. 12, 13.
Period of record: Maximum discharge, 51,800 ft³/s (1,467 m³/s) Apr. 17, 1950, gage height, 34.0 ft (10.363 m), from floodmark in well, site and datum then in use, from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of slope-area measurement at gage height 26.9 ft (8.199 m) and slope-area and contracted-opening measurements at gage height 34.0 ft (10.363 m); no flow at times.
Maximum stage known since at least 1889 that of Apr. 17, 1950. Flood of Mar. 25 and 26, 1943, reached a stage of 26.9 ft (8.199 m), site and datum then in use, discharge 15,000 ft³/s (425 m³/s) by slope-area measurement.

REMARKS.--Records good except those for the winter period, which are fair. Some diversions and some storage in small lakes above the station. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1729: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	15	7.0	4.5	5.3	9.0	45	2560	62	104	14	9.6
2	2.7	11	7.0	4.5	5.2	8.0	40	1140	59	75	12	9.0
3	2.6	9.8	7.0	4.5	5.2	8.0	30	598	58	102	14	8.3
4	3.2	9.4	7.3	4.5	5.2	8.5	40	380	54	94	14	7.8
5	3.8	9.5	6.9	4.0	5.0	9.0	45	273	51	79	14	7.7
6	3.7	10	7.1	4.0	5.0	9.0	55	216	49	73	12	6.6
7	4.0	9.9	7.1	3.8	5.0	8.5	65	252	48	66	11	6.5
8	4.1	9.7	6.2	4.0	4.5	7.5	70	560	48	60	10	6.2
9	4.6	8.9	6.7	4.0	4.0	7.0	68	1190	52	60	9.4	6.2
10	4.6	8.5	7.0	3.5	4.0	7.0	65	2880	64	56	8.8	6.6
11	4.7	8.5	7.2	3.0	4.0	6.5	62	4790	144	49	8.2	7.9
12	5.0	8.5	7.1	2.0	4.0	6.5	60	3830	173	43	8.6	8.1
13	5.3	8.6	7.3	2.0	3.5	6.8	65	1560	118	39	8.8	7.8
14	6.0	8.2	6.9	2.5	3.5	7.0	75	826	97	36	9.9	7.3
15	5.7	9.8	6.9	3.0	3.5	8.0	80	452	84	32	12	6.7
16	6.0	9.8	6.8	3.0	3.5	9.5	167	291	81	29	11	6.5
17	6.1	9.6	6.6	3.5	3.6	10	356	225	78	31	11	6.9
18	5.6	11	6.6	4.5	3.8	20	510	180	69	30	10	7.1
19	6.0	11	6.2	5.5	4.0	30	911	154	80	26	11	7.5
20	6.5	9.5	6.3	6.0	5.0	38	1330	131	101	25	12	8.2
21	6.5	9.2	6.2	6.5	6.0	30	2670	118	98	23	16	9.3
22	7.3	9.1	6.2	7.0	7.0	26	3230	113	98	22	51	8.3
23	6.5	8.7	6.1	7.0	8.0	23	3010	115	87	20	362	7.4
24	7.0	8.2	5.3	7.5	10	22	1830	125	76	19	91	8.9
25	7.2	8.2	5.1	8.0	13	21	1060	121	68	19	50	8.7
26	7.4	7.8	5.1	8.0	15	20	808	113	70	18	32	8.7
27	8.1	7.6	5.1	7.0	10	22	898	106	66	18	22	9.1
28	7.9	7.6	4.8	6.5	9.5	24	1620	97	59	17	17	9.7
29	8.0	7.6	4.8	6.0	---	25	4340	89	57	15	15	10
30	15	7.2	4.0	5.5	---	30	4590	82	210	14	12	10
31	21	---	4.2	5.4	---	40	---	74	---	15	11	---
TOTAL	194.7	277.4	194.1	150.7	165.3	506.8	28195	23641	2459	1309	900.7	238.6
MEAN	6.28	9.25	6.26	4.86	5.90	16.3	940	763	82.0	42.2	29.1	7.95
MAX	21	15	7.3	8.0	15	40	4590	4790	210	104	362	10
MIN	2.6	7.2	4.0	2.0	3.5	6.5	30	74	48	14	8.2	6.2
AC-FT	386	550	385	299	328	1010	55920	46890	4880	2600	1790	473

CAL YR 1974	TOTAL	5096.54	MEAN	14.0	MAX	70	MIN	.36	AC-FT	10110
WTR YR 1975	TOTAL	58232.30	MEAN	160	MAX	4790	MIN	2.0	AC-FT	115500

PEAK DISCHARGE (BASE, 500 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-22	2315	12.82	3,610	5-11	1445	14.51	5,000
4-30	0415	14.81	5,180				

CANNONBALL RIVER BASIN

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06351680 WHITE BUTTE FORK CEDAR CREEK NEAR SCRANTON, N. DAK.

LOCATION.--Lat 46°19'20", long 102°59'45", in NW¼ sec.21, T.133 N., R.98 W., Slope County, on left bank 1,200 ft (366 m) downstream from county highway bridge and 13 mi (21 km) northeast of Scranton.

DRAINAGE AREA.--42.9 mi² (111 km²).

PERIOD OF RECORD.--March 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--10 years, 7.54 ft³/s (0.214 m³/s), 3,790 acre-ft/yr (4.67 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 350 ft³/s (9.91 m³/s) Apr. 29, gage height, 6.52 ft (1.987 m), no flow on several months.
Period of record: Maximum discharge, 645 ft³/s (18.3 m³/s) May 8, 1970, gage height, 7.20 ft (2.19 m); maximum gage height, 7.76 ft (2.365 m) May 8, 1967; no flow for many days each year.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0				0	0	56	2.3	2.5	.02	.03
2		0				0	0	22	2.3	2.4	.01	0
3		0				0	0	14	2.1	9.0	0	0
4		0				0	0	7.8	2.0	15	0	0
5		0				0	0	5.8	1.8	6.5	0	0
6		.30				0	0	17	1.7	4.2	0	0
7		.20				0	0	207	1.7	3.2	0	0
8		0				0	0	59	1.6	2.4	0	0
9		0				0	0	103	1.9	1.9	0	0
10		0				0	0	252	2.8	1.7	0	0
11		0				0	0	224	3.4	1.3	0	0
12		0				0	0	51	6.3	1.2	0	0
13		0				0	5.4	23	4.4	1.0	0	0
14		0				0	12	10	4.0	.98	0	0
15		0				0	23	7.0	3.5	.80	0	0
16		.28				0	20	5.4	3.2	.65	0	0
17		.09				.20	60	4.6	3.2	.51	0	0
18		0				.50	50	4.0	3.2	.60	0	0
19		0				1.0	80	3.7	5.6	.70	0	0
20		0				.80	97	3.7	11	.65	.01	0
21		0				.50	101	3.7	23	.47	.04	0
22		0				.30	142	5.0	21	.39	.07	0
23		0				.10	95	7.4	7.4	.39	.18	0
24		0				0	68	8.3	5.2	.31	.18	0
25		0				0	67	6.0	3.9	.31	.12	0
26		0				0	44	4.4	4.0	.31	.07	0
27		0				0	28	3.7	4.2	.27	.21	0
28		0				0	128	3.2	3.5	.21	.92	0
29		0			---	0	284	2.9	3.2	.09	.60	0
30		0			---	0	104	2.5	2.8	.02	.35	0
31		---			---	0	---	2.3	---	.01	.15	---
TOTAL	0	.87	0	0	0	3.40	1408.4	1129.4	146.2	59.97	2.93	.03
MEAN	0	.029	0	0	0	.11	46.9	36.4	4.87	1.93	.095	.001
MAX	0	.30	0	0	0	1.0	284	252	23	15	.92	.03
MIN	0	0	0	0	0	0	0	2.3	1.6	.01	0	0
AC-FT	0	1.7	0	0	0	6.7	2790	2240	290	119	5.8	.06
CAL YR 1974	TOTAL	155.14	MEAN	.43	MAX	6.5	MIN	0	AC-FT	308		
WTR YR 1975	TOTAL	2751.20	MEAN	7.54	MAX	284	MIN	0	AC-FT	5460		

PEAK DISCHARGE (BASE, 50 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-19	--	--	120	5- 7	0900	6.42	343
4-22	--	--	180				
4-29	0400	6.52	350	5-10	0300	6.33	330

CANNONBALL RIVER BASIN

06352000 CEDAR CREEK NEAR HAYNES, N. DAK.

LOCATION.--Lat 46°09'15", long 102°28'25", in W½ sec.20, T.131 N., R.94 W., Adams County, on left bank 30 ft (9 m) downstream from bridge on State Highway 8 and 12.5 mi (20 km) north of Haynes.

DRAINAGE AREA.--553 mi² (1,430 km²).

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,472.90 ft (753.740 m) above mean sea level, North Dakota Highway Department benchmark. Prior to May 20, 1951, nonrecording gage on former bridge 400 ft (120 m) upstream at same datum.

AVERAGE DISCHARGE.--25 years, 34.5 ft³/s (0.977 m³/s), 25,000 acre-ft/yr (30.8 hm³/yr); median of yearly mean discharges, 30 ft³/s (0.85 m³/s), 21,700 acre-ft/yr (27 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 3,530 ft³/s (100 m³/s) May 11, gage height, 18.88 ft (5.755 m), minimum daily, 0.54 ft³/s (0.015 m³/s) Jan. 13.

Period of record: Maximum discharge, 7,870 ft³/s (223 m³/s) Apr. 7, 1952, gage height, 21.25 ft (6.477 m); no flow at times in some years.

Flood of Apr. 17, 1950 reached a stage of about 23 ft (7.0 m), discharge, 26,900 ft³/s (762 m³/s), by slope-area measurement at site 9 mi (14 km) upstream.

REMARKS.--Records good except those for the winter period, which are fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.78	2.4	2.1	2.9	1.5	13	13	1220	48	40	4.0	3.1
2	.78	2.4	2.2	2.9	1.4	8.9	15	666	36	33	3.9	3.1
3	.78	2.0	2.6	3.1	2.2	3.6	15	392	33	26	3.5	2.9
4	.85	1.8	2.6	3.1	2.1	4.0	17	254	33	23	3.5	2.8
5	.97	1.7	2.4	3.4	1.7	4.7	17	175	29	20	3.5	2.6
6	1.2	1.6	2.3	3.0	1.7	3.4	17	130	27	18	3.5	2.6
7	1.3	1.6	2.3	2.2	1.0	2.6	20	291	26	17	3.0	2.6
8	1.3	1.5	2.3	2.1	1.4	2.5	23	747	24	18	2.6	2.6
9	1.3	1.5	2.6	2.1	1.2	2.0	25	1300	26	18	2.6	2.6
10	1.3	1.4	2.8	1.9	1.1	2.2	25	2650	32	16	2.4	2.6
11	1.2	1.4	2.7	.80	1.0	2.1	21	3100	32	15	2.5	2.5
12	1.2	1.3	2.7	.60	1.0	1.8	18	1770	35	13	2.6	2.4
13	1.2	1.6	2.9	.55	1.0	2.0	15	1200	35	12	3.2	2.4
14	1.1	1.6	3.0	.54	1.0	2.4	16	499	31	9.3	3.5	2.4
15	1.1	1.6	3.0	.60	1.0	5.2	27	316	34	8.2	3.9	2.4
16	1.1	1.5	3.0	.70	1.0	12	25	188	37	8.0	3.7	2.4
17	.99	1.5	3.1	.80	1.0	17	52	142	40	6.9	3.2	2.4
18	.99	1.5	3.0	1.0	1.0	18	49	112	36	6.2	3.7	2.4
19	1.0	1.6	2.8	1.0	1.0	16	336	92	47	6.1	4.7	2.4
20	1.2	1.6	2.6	2.0	1.0	15	456	80	53	5.7	6.0	2.4
21	1.1	1.6	2.6	3.0	1.2	17	708	72	64	5.5	5.2	2.4
22	1.1	1.6	2.6	3.0	1.0	18	1180	72	79	4.8	4.6	2.4
23	1.2	1.6	2.6	3.0	1.0	20	1110	79	98	4.8	4.9	2.4
24	1.2	1.6	2.4	3.0	2.3	16	809	95	132	4.8	5.8	2.4
25	1.2	1.6	2.4	2.7	4.0	16	547	104	109	4.8	5.5	2.4
26	1.2	1.6	2.6	2.6	5.4	9.8	448	93	81	4.8	4.9	2.5
27	1.2	1.8	2.5	1.8	7.6	11	482	87	59	4.6	5.6	2.6
28	1.1	1.8	2.7	1.3	13	13	710	76	45	4.4	5.0	2.7
29	1.1	1.8	2.7	1.4	---	9.8	2130	63	40	4.1	4.3	2.7
30	1.2	2.0	2.8	1.7	---	9.8	1490	55	41	4.0	3.6	2.9
31	1.9	---	2.8	1.8	---	13	---	57	---	3.9	3.3	---
TOTAL	35.14	50.1	81.7	60.59	60.8	291.8	10816	16177	1442	369.9	122.2	77.0
MEAN	1.13	1.67	2.64	1.95	2.17	9.41	361	522	48.1	11.9	3.94	2.57
MAX	1.9	2.4	3.1	3.4	13	20	2130	3100	132	40	6.0	3.1
MIN	.78	1.3	2.1	.54	1.0	1.8	13	55	24	3.9	2.4	2.4
AC-FT	70	99	162	120	121	579	21450	32090	2860	734	242	153
CAL YR 1974 TOTAL	2725.28			MEAN 7.47	MAX 188	MIN .41	AC-FT 5410					
WTR YR 1975 TOTAL	29584.23			MEAN 81.1	MAX 3100	MIN .54	AC-FT 58680					

PEAK DISCHARGE (BASE, 400 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-22	2200	13.90	1,280	5-11	0730	18.88	3,530
4-29	0745	16.86	2,350				

06352500 CEDAR CREEK NEAR PRETTY ROCK, N. DAK.

LOCATION.--Lat 46°01'55", long 101°49'55", in S½ sec.33, T.130 N., R.89 W., Grant County, on left bank on downstream side of county highway bridge, 7 mi (11 km) north of Keldron, S. Dak., 10.5 mi (17 km) south of abandoned townsite of Pretty Rock, and 15 mi (24 km) downstream from Timber Creek.

DRAINAGE AREA.--1,340 mi² (3,470 km²), approximately.

PERIOD OF RECORD.--April 1943 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,155.17 ft (656.896 m) above mean sea level, levels by Corps of Engineers. Prior to Oct. 17, 1947, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--32 years, 74.7 ft³/s (2.116 m³/s), 54,120 acre-ft/yr (66.7 hm³/yr); median of yearly mean discharges, 56 ft³/s (1.59 m³/s), 40,600 acre-ft/yr (50 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 4,380 ft³/s (124 m³/s) May 12, gage height, 13.05 ft (3.978 m); minimum, no flow Oct. 1-30.

Period of record: Maximum discharge, 48,000 ft³/s (1,360 m³/s) Apr. 17, 1950, gage height, 26.5 ft (8.077 m), from floodmark in gage house, from rating curve extended above 7,800 ft³/s (221 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

Flood of Mar. 24, 1943, reached a stage of 21.8 ft (6.645 m), from floodmarks, discharge, 14,300 ft³/s (405 m³/s).

REMARKS.--Records good. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1146: 1944, 1947. WSP 1209: Drainage area. WSP 1389: 1951.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.02	2.1	2.8	2.5	3.4	5.7	2570	125	66	14	6.7
2	0	.02	2.0	2.5	2.6	3.4	5.7	1960	108	60	12	5.1
3	0	.02	2.0	2.4	2.6	3.2	4.9	1420	96	59	7.6	5.2
4	0	.02	2.4	2.3	2.8	3.1	4.5	864	88	57	6.4	5.3
5	0	.02	2.3	2.7	2.6	3.4	4.1	584	80	53	6.9	4.9
6	0	.03	2.8	2.7	2.2	3.7	3.7	438	75	49	6.4	3.7
7	0	.03	3.1	2.7	2.0	4.0	3.7	393	70	45	6.4	2.8
8	0	.06	2.5	2.5	2.0	4.1	3.7	476	69	40	6.2	2.6
9	0	.21	2.9	2.6	1.8	4.1	4.1	1290	70	36	6.0	2.0
10	0	.43	3.0	2.5	1.6	4.1	5.3	3320	71	32	5.7	1.9
11	0	.94	3.4	2.0	1.5	4.1	9.0	3810	69	28	5.7	1.6
12	0	1.2	3.6	1.5	1.5	4.1	9.0	4280	68	26	7.4	1.5
13	0	1.4	4.0	1.5	1.4	4.0	10	3920	68	27	7.1	1.3
14	0	1.4	4.0	1.5	1.4	4.7	10	2360	72	24	8.1	1.1
15	0	1.5	4.1	2.0	1.4	5.6	10	1420	71	22	9.2	1.2
16	0	1.5	4.1	2.0	1.4	7.2	31	700	70	20	10	.98
17	0	1.5	4.0	2.0	1.3	8.9	120	570	67	19	12	1.2
18	0	1.5	4.0	2.5	1.3	18	483	438	63	16	12	1.2
19	0	1.5	3.9	2.5	1.3	27	919	372	75	14	12	1.1
20	0	1.7	4.1	2.5	1.4	30	1020	287	88	12	13	.96
21	0	1.7	4.1	3.0	1.4	27	955	258	93	11	15	1.0
22	0	2.0	4.3	3.0	1.5	19	796	225	113	11	19	1.1
23	0	1.8	4.2	3.5	1.5	14	955	216	130	10	23	.96
24	0	1.8	3.9	3.7	1.6	6.9	1230	225	103	9.1	225	.98
25	0	2.0	3.2	3.2	1.9	8.4	1240	231	98	8.1	103	1.2
26	0	2.0	3.3	3.6	2.1	15	986	222	103	7.7	46	1.2
27	0	2.0	3.3	3.4	2.7	18	766	222	125	7.0	30	1.0
28	0	2.1	3.3	2.8	3.0	19	794	207	119	6.1	20	1.3
29	0	2.0	3.3	2.8	---	12	1410	183	100	5.5	13	1.4
30	0	2.0	2.9	3.1	---	7.2	2410	156	80	5.4	11	1.4
31	.01	---	3.0	3.0	---	6.7	---	142	---	5.4	8.6	---
TOTAL	.01	34.40	103.1	80.8	52.3	303.3	14208.4	33759	2627	791.3	687.7	63.88
MEAN	.0003	1.15	3.33	2.61	1.87	9.78	474	1089	87.6	25.5	22.2	2.13
MAX	.01	2.1	4.3	3.7	3.0	30	2410	4280	130	66	225	6.7
MIN	0	.02	2.0	1.5	1.3	3.1	3.7	142	63	5.4	5.7	.96
AC-FT	.02	68	204	160	104	602	28180	66960	5210	1570	1360	127
CAL YR 1974	TOTAL	6437.43	MEAN	17.6	MAX	420	MIN	0	AC-FT	12770		
WTR YR 1975	TOTAL	52711.19	MEAN	144	MAX	4280	MIN	0	AC-FT	104600		

PEAK DISCHARGE (BASE, 500 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-20	1700	7.60	1,390	5-1	1145	9.97	2,640
4-24	1345	7.19	1,270	5-12	1100	13.05	4,380

06353000 CEDAR CREEK NEAR RALEIGH, N. DAK.

LOCATION.--Lat 46°05'30", long 101°20'00", in NE¼SE¼ sec.8, T.130 N., R.85 W., Grant County, on left bank at upstream side of bridge on N.D. Highway 31, 6 mi (10 km) upstream from mouth, and 19 mi (30 km) south of Raleigh.

DRAINAGE AREA.--1,750 mi² (4,530 km²), approximately.

PERIOD OF RECORD.--April to September 1939, March 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,881.23 ft (573.399 m) above mean sea level. Prior to June 6, 1962, nonrecording gage at same site and datum, and June 6, 1962, to Sept. 7, 1972, at site 1 mi (2 km) upstream at datum 9.58 ft (2.920 m) higher.

AVERAGE DISCHARGE.--13 years (1962-75) 101 ft³/s (2.860 m³/s), 73,170 acre-ft/yr (90.2 hm³/yr); median of yearly mean discharges, 82 ft³/s (2.32 m³/s), 59,400 acre-ft/yr (73 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 4,520 ft³/s (128 m³/s) May 11, gage height, 9.75 ft (2.972 m), minimum, no flow for several months

Period of record: Maximum discharge, 6,000 ft³/s (170 m³/s) Mar. 15, 1966, gage height, 12.32 ft (3.755 m), backwater from ice; no flow at times in most years.

Maximum stage known since 1950, about 18 ft (5.486 m) Apr. 18, 1950, discharge 45,000 ft³/s (1,270 m³/s), on basis of slope-area measurement 5 mi (8 km) upstream.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	.50	1960	141	95	27	16
2						0	.30	2050	123	77	16	12
3						0	.20	1590	109	65	15	9.1
4						0	.50	1100	99	59	15	7.2
5						0	1.0	680	90	59	16	6.9
6						0	5.0	474	79	101	16	6.2
7						0	10	399	73	95	14	5.3
8						0	50	728	69	63	13	4.5
9						0	140	781	73	48	12	4.0
10						0	280	1990	73	48	11	3.8
11						0	210	3980	66	38	10	3.4
12						0	230	3240	65	35	10	3.0
13						.50	300	3320	62	33	10	2.9
14						1.0	320	3040	66	30	10	2.7
15						6.0	410	1820	69	29	10	2.4
16						50	360	1030	69	28	10	2.3
17						70	400	638	66	27	11	2.1
18						80	350	480	65	25	10	2.4
19						90	325	402	168	24	11	2.4
20						40	560	333	141	22	11	2.1
21						15	960	279	119	21	10	2.1
22						5.0	1020	240	117	19	11	1.9
23						4.0	1100	250	113	18	11	1.6
24						2.0	1090	226	121	17	12	1.6
25						1.0	1300	206	115	16	11	1.6
26						1.0	1100	204	95	16	114	1.5
27						1.0	874	202	93	16	93	1.5
28						1.0	1810	192	103	15	56	1.7
29						1.0	1200	186	121	14	41	1.7
30					---	.50	1300	168	127	13	28	1.6
31		---			---	.50	---	157	---	14	20	---
TOTAL	0	0	0	0	0	369.50	15706.50	32345	2890	1180	665	117.5
MEAN	0	0	0	0	0	11.9	524	1043	96.3	38.1	21.5	3.92
MAX	0	0	0	0	0	90	1810	3980	168	101	114	16
MIN	0	0	0	0	0	0	.20	157	62	13	10	1.5
AC-FT	0	0	0	0	0	733	31150	64160	5730	2340	1320	233
CAL YR 1974	TOTAL	7641.82	MEAN	20.9	MAX	250	MIN	0	AC-FT	15160		
WTR YR 1975	TOTAL	53273.50	MEAN	146	MAX	3980	MIN	0	AC-FT	105700		

PEAK DISCHARGE (BASE, 700 FT³/S)

PEAK	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-25	1200	5.99	1,330	5-8	0530	5.44	926
4-28	1700	7.77	2,340	5-11	0530	9.75	4,520
5-2	1000	7.50	2,120				

CANNONBALL RIVER BASIN

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06354000 CANNONBALL RIVER AT BREIEN, N. DAK.

LOCATION.--Lat 46°22'33", long 100°56'03", in sec.36, T.134 N., R.82 W., Morton County, on left bank at downstream side of bridge on State Highway 6, 1,500 ft (460 m) downstream from Louise Creek and 0.6 mi (1.0 km) southeast of Breien. Prior to June 12, 1973, at site 600 ft (180 m) upstream on right bank.

DRAINAGE AREA.--4,100 mi² (10,600 km²), approximately.

PERIOD OF RECORD.--August 1934 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,675.54 ft (510.705 m) above mean sea level. Prior to June 12, 1973, at site 600 ft (180 m) upstream at datum 1 ft (0.3048 m) higher.

AVERAGE DISCHARGE.--41 years, 245 ft³/s (6.938 m³/s), 177,500 acre-ft/yr (219 hm³/yr); median of yearly mean discharges, 190 ft³/s (5.38 m³/s), 138,000 acre-ft/yr (170 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 8,220 ft³/s (233 m³/s) May 13, gage height, 10.70 ft (3.261 m); minimum discharge, 0.02 ft³/s (0.0006 m) Oct. 1, gage height 0.60 ft (0.183 m).
Period of record: Maximum discharge, 94,800 ft³/s (2,680 m³/s) Apr. 19, 1950, gage height, 22.30 ft (6.797 m), from floodmarks, from rating curve extended above 16,000 ft³/s (453 m³/s) on basis of slope-area and contracted-opening of peak flow, site and datum then in use; no flow at times in some years.

REMARKS.--Records good except those for the winter period, which are fair. Some storage in several small lakes above station. Records of chemical analyses and suspended sediment loads for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 786: 1934. WSP 1146: 1943. WSP 1279: 1936-37(M), 1947(M). WSP 1509: 1955(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	1.1	10	7.0	1.8	2.0	12	6060	407	347	196	85
2	.03	7.3	9.9	6.5	1.8	2.0	12	5910	383	488	134	70
3	.06	3.7	9.5	6.5	1.8	3.0	10	4320	358	513	58	57
4	.07	3.2	9.9	6.0	1.8	4.0	10	2770	329	336	44	50
5	.09	2.8	9.9	6.0	1.6	5.0	10	1780	305	252	39	44
6	.15	2.7	9.9	5.5	1.6	6.0	15	1280	284	228	32	37
7	.19	5.5	9.5	5.0	1.6	7.0	20	1050	280	532	29	34
8	.24	17	7.6	4.5	1.4	6.0	30	1390	270	447	28	28
9	.33	15	7.6	4.5	1.4	6.0	50	1530	323	399	24	24
10	.36	15	7.6	4.5	1.4	6.0	100	2480	379	305	22	21
11	.36	12	7.9	4.0	1.4	7.0	200	5960	302	234	19	18
12	.44	11	8.3	3.0	1.2	8.0	500	7520	284	189	18	17
13	.44	9.5	8.7	3.0	1.2	9.0	700	8080	284	165	16	17
14	.48	8.3	9.1	3.0	1.2	10	800	6460	319	145	15	15
15	.48	9.5	9.1	3.0	1.2	20	900	4340	431	126	15	15
16	.48	11	9.1	2.5	1.0	100	1100	2570	379	111	15	14
17	.48	12	9.1	2.5	1.0	100	1300	1610	344	101	15	14
18	.48	11	9.1	2.5	1.0	150	1520	1160	326	94	15	13
19	.48	15	9.1	2.5	1.0	280	1570	1060	382	87	18	12
20	.52	11	9.1	2.5	1.0	200	2020	825	580	78	33	13
21	.52	12	9.1	2.5	1.0	130	2620	700	415	70	28	14
22	.48	14	9.1	2.5	1.0	80	3180	630	451	68	24	14
23	.48	15	9.5	2.5	1.0	50	4150	644	423	64	194	14
24	.48	12	9.5	2.5	1.0	30	4550	705	361	60	87	14
25	.48	12	9.0	2.5	1.0	25	4050	608	326	55	314	14
26	.52	14	8.5	2.5	1.0	25	3180	567	302	51	439	12
27	.52	9.5	8.5	2.0	1.2	20	2390	535	261	47	326	12
28	.52	12	8.0	2.0	1.6	20	4720	504	234	44	255	13
29	.52	11	8.0	2.0	---	15	6210	479	228	39	186	14
30	.56	11	7.5	2.0	---	15	4520	455	484	34	140	14
31	1.4	---	7.0	2.0	---	15	---	399	---	41	109	---
TOTAL	12.66	306.1	273.7	109.5	36.2	1356.0	50449	74381	10434	5750	2887	733
MEAN	.41	10.2	8.83	3.53	1.29	43.7	1682	2399	348	185	93.1	24.4
MAX	1.4	17	10	7.0	1.8	280	6210	8080	580	532	439	85
MIN	.02	1.1	7.0	2.0	1.0	2.0	10	399	228	34	15	12
AC-FT	25	607	543	217	72	2690	100100	147500	20700	11410	5730	1450

CAL YR 1974	TOTAL	17516.99	MEAN	48.0	MAX	506	MIN	.01	AC-FT	34740
WTR YR 1975	TOTAL	146728.16	MEAN	402	MAX	8080	MIN	.02	AC-FT	291000

PEAK DISCHARGE (BASE, 1,000 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-24	1200	7.96	4,620	5-1	2400	9.75	6,750
4-29	0600	10.17	7,530	5-13	1200	10.70	8,220

BEAVER CREEK BASIN

06354500 BEAVER CREEK AT LINTON, N. DAK.

LOCATION.--Lat 46°15'27", long 100°13'58", on line between secs.17 and 18, T.132 N., R.76 W., Emmons County, on left bank 60 ft (18 m) downstream from bridge on U.S. Highway 83, 0.7 mi (1.1 km) south of railway station in Linton, and 1 mi (2 km) upstream from Spring Creek.

DRAINAGE AREA.--717 mi² (1,857 km²), of which about 100 mi² (260 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,690.55 ft (515.280 m) above mean sea level. Prior to June 18, 1958, nonrecording gage at site 60 ft (18 m) upstream at same datum.

AVERAGE DISCHARGE.--26 years, 41.8 ft³/s (1.184 m³/s), 30,280 acre-ft/yr (37.3 hm³/yr); median of yearly mean discharges, 29 ft³/s (0.82 m³/s), 21,000 acre-ft/yr (26 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 500 ft³/s (14.2 m³/s) Apr. 21, gage height, 10.24 ft (3.121 m); no flow for several periods.
Period of record: Maximum discharge, 9,800 ft³/s (278 m³/s) Apr. 8, 1952, gage height, 17.50 ft (5.334 m); no flow at times in some years.

REMARKS.--Records fair except those for the winter period which are poor. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1209: Drainage area. WSP 1239: 1950(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.02	.04	.90	.02	0	4.0	155	35	220	14	.78
2	.10	.02	.04	.90	.01	0	3.0	153	34	238	14	.78
3	.10	.02	.06	.90	.01	0	2.0	136	33	146	12	.78
4	.08	.02	.06	.80	0	0	1.0	120	32	102	10	.85
5	.10	.02	.06	.80	0	0	1.0	109	31	84	8.5	1.1
6	.10	.02	.06	.70	0	0	1.0	100	30	69	7.0	.99
7	.10	.02	.20	.70	0	0	1.0	95	30	58	6.0	1.1
8	.10	.02	.30	.60	0	0	1.0	91	30	47	5.0	1.1
9	.10	.02	.30	.60	0	0	2.0	90	35	42	4.5	.56
10	.10	.02	.40	.60	0	0	4.0	91	46	38	4.5	.51
11	.10	.02	.50	.50	0	0	6.0	88	51	36	4.0	.38
12	.08	.02	.60	.40	0	0	9.0	80	68	34	4.0	.26
13	.08	.02	.70	.30	0	0	16	74	74	31	3.5	.26
14	.12	.02	.90	.20	0	0	26	70	60	29	3.0	.22
15	.12	.10	.90	.20	0	.02	40	87	50	28	3.0	.19
16	.10	.20	1.0	.20	0	.10	52	224	46	27	2.5	.12
17	.10	.30	1.0	.20	0	1.9	100	211	42	25	2.2	.14
18	.06	.66	1.1	.20	0	6.0	200	199	42	24	1.9	.51
19	.06	.08	1.2	.20	0	14	300	278	42	23	5.8	.34
20	.04	.06	1.2	.20	0	30	350	209	48	22	3.8	.22
21	0	.04	1.3	.10	0	50	480	109	59	20	5.4	.14
22	0	.04	1.3	.10	0	60	430	83	165	20	3.8	.22
23	0	.04	1.3	.10	0	40	380	65	119	20	3.6	.10
24	0	.04	1.3	.10	0	45	370	72	85	19	3.0	.08
25	0	.04	1.2	.10	0	40	243	78	139	20	2.5	.06
26	0	.04	1.2	.10	0	30	213	70	112	20	2.1	.04
27	0	.04	1.1	.10	0	20	166	54	90	19	2.0	.02
28	0	.04	1.1	.10	0	15	152	44	64	18	1.7	0
29	0	.04	1.0	.10	---	10	153	40	52	16	1.5	0
30	0	.04	1.0	.05	---	6.0	151	37	77	15	1.2	0
31	.02	---	1.0	.02	---	5.0	---	36	---	14	1.1	---
TOTAL	1.84	2.08	23.42	11.07	.04	373.02	3857.0	3348	1821	1524	147.1	11.85
MEAN	.059	.069	.76	.36	.001	12.0	129	108	60.7	49.2	4.75	.40
MAX	.12	.66	1.3	.90	.02	60	480	278	165	238	14	1.1
MIN	0	.02	.04	.02	0	0	1.0	36	30	14	1.1	0
AC-FT	3.6	4.1	46	22	.08	740	7650	6640	3610	3020	292	24
CAL YR 1974 TOTAL	13556.22			MEAN 37.1	MAX 1250	MIN 0	AC-FT 26890					
WTR YR 1975 TOTAL	11120.42			MEAN 30.5	MAX 480	MIN 0	AC-FT 22060					

PEAK DISCHARGE (BASE, 200 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-21	--	--	500	6-22	1800	8.11	310
5-19	0330	8.38	345	7- 2	0300	7.72	273

SPRING CREEK BASIN

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06354860 SPRING CREEK NEAR HERREID, S. DAK.

LOCATION.--Lat 45°48'52", long 100°06'28", in SW¼ sec.13, T.127 N., R.77 W., Campbell County, on left bank 0.5 mi (0.8 km) upstream from county highway bridge, 2.4 mi (3.9 km) southwest of Herreid and 13.2 mi (21.2 km) upstream from high-water line of Lake Oahe.

DRAINAGE AREA.--440 mi² (1,140 km²), approximately, of which about 220 mi² (570 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,653.80 ft (504.078 m) above mean sea level.

AVERAGE DISCHARGE.--13 years, 9.73 ft³/s (0.276 m³/s), 7,050 acre-ft/yr (8.69 hm³/yr); median of yearly mean discharges, 5.2 ft³/s (0.15 m³/s), 3,800 acre-ft/yr (4.69 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 216 ft³/s (6.12 m³/s) Apr. 19; maximum gage height, 7.27 ft (2.216 m) Apr. 17 (backwater from ice); no flow for many days.
Period of record: Maximum discharge, 1,160 ft³/s (32.9 m³/s) Mar. 17, 1966, gage height, 11.60 ft (3.536 m); no flow for several months each year.

REMARKS.--Records fair.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	23	1.1	1.2		
2							0	17	.96	.90		
3							0	14	.90	.96		
4							0	12	.72	.72		
5							0	11	.60	.34		
6							0	11	.60	.19		
7							0	26	.60	.16		
8							0	13	.72	.08		
9							0	10	2.9	.04		
10							0	9.6	4.2	.04		
11							0	13	12	.04		
12							2.0	24	9.0	.04		
13							5.0	15	7.6	.04		
14							30	8.2	6.4	.03		
15							100	5.7	6.0	0		
16							150	4.5	4.4	0		
17							180	3.5	3.4	0		
18							200	3.2	2.5	0		
19							171	3.2	4.0	0		
20							108	3.5	3.8	0		
21							88	3.0	2.6	0		
22							70	2.5	5.2	0		
23							63	2.6	10	0		
24							63	3.6	12	0		
25							57	3.6	11	0		
26							50	2.8	8.2	0		
27							42	2.5	6.0	0		
28							34	2.3	3.7	0		
29							29	2.1	2.6	0		
30							28	1.7	2.0	0		
31		---			---	---	---	1.4	---	0		---
TOTAL	0	0	0	0	0	0	1470.0	258.5	135.70	4.78	0	0
MEAN	0	0	0	0	0	0	49.0	8.34	4.52	.15	0	0
MAX	3	0	0	0	0	0	200	26	12	1.2	0	0
MIN	0	0	0	0	0	0	0	1.4	.60	0	0	0
AC-FT	0	0	0	0	0	0	2920	513	269	9.5	0	0
CAL YR 1974	TOTAL	1784.33	MEAN	4.89	MAX	150	MIN	0	AC-FT	3540		
WTR YR 1975	TOTAL	1868.98	MEAN	5.12	MAX	200	MIN	0	AC-FT	3710		

PEAK DISCHARGE (BASE, 40 FT³/S).--Apr. 19 (0700) 216 FT³/S (7.10 FT).

GRAND RIVER BASIN

06354988 BOWMAN-HALEY LAKE NEAR HALEY, N. DAK.

LOCATION.--Lat 45°59'06", long 103°14'43", in NE¼ sec.24, T.129 N., R.101 W., Bowman County, at dam on North Fork Grand River 6 mi (10 km) west of Haley.

DRAINAGE AREA.--446 mi² (1,155 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is at mean sea level.

EXTREMES.--Current year: Maximum contents, 24,910 acre-ft (30.7 hm³) May 12, elevation, 2,757.47 ft (840.477 m); minimum, 16,500 acre-ft (20.3 hm³) Mar. 8-10, elevation, 2,752.78 ft (839.047 m).
Period of record: Maximum contents, 27,130 acre-ft (33.5 hm³) Mar. 13, 1972, elevation, 2,758.50 ft (840.791 m); minimum since first reaching spillway level, 16,500 acre-ft (20.3 hm³) Mar. 8-10, 1975, elevation, 2,752.78 ft (839.047 m).

REMARKS.--Reservoir is formed by a rolled earth-fill dam; storage began Aug. 22, 1966; dam completed April 1967. Total capacity is 93,000 acre-ft (115 hm³) at maximum pool, elevation, 2,777.0 ft (846.430 m). Dead storage is 4,280 acre-ft (5.28 hm³) below lowest point of outlet, elevation, 2,740.0 ft (835.152 m). Normal operating storage is 20,100 acre-ft (24.8 hm³) at elevation 2,755.0 ft (839.724 m), crest of spillway. Figures given herein represent total contents. Controlled releases are through a 30-inch (0.762 m) or 8-inch (0.203 m) gate valve. The spillway is uncontrolled "glory hole" type and discharges through a conduit 9 ft (2.743 m) in diameter. The reservoir is for flood control, water supply, and recreation.

COOPERATION.--Records of elevations and contents furnished by Corps of Engineers from capacity table dated August 1966. Elevations affected by wind.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30-----	2,753.18*	17,110	
Oct. 31-----	2,752.96	16,760	-350
Nov. 30-----	2,752.88	16,650	-110
Dec. 31-----	2,752.86	16,620	-30
CAL YR 1974-----	--	--	-2,610
Jan. 31-----	2,752.84	16,590	-30
Feb. 28-----	2,752.81	16,540	-50
Mar. 31-----	2,753.11	17,000	+460
Apr. 30-----	2,756.15	22,250	+5,250
May 31-----	2,755.25	20,580	-1,670
June 30-----	2,755.22	20,530	-50
July 31-----	2,754.60	19,440	-1,090
Aug. 31-----	2,754.06	18,510	-930
Sept. 30-----	2,753.58	17,740	-770
WTR YR 1975-----	--	--	+630

* Estimated

06355000 NORTH FORK GRAND RIVER AT HALEY, N. DAK.

LOCATION.--Lat 45°57'39", long 103°07'09", at southwest corner of sec.30, T.129 N., R.99 W., Bowman County, on left bank 10 ft (3 m) downstream from county highway bridge, 300 ft (91 m) south of post office at Haley, and 1 mi (1.6 km) north of South Dakota state line.

DRAINAGE AREA.--509 mi² (1,318 km²).

PERIOD OF RECORD.--May 1908 to September 1917, October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,658.60 ft (810.341 m) above mean sea level. Oct. 23, 1945, to June 18, 1951, nonrecording gage on downstream side of bridge near left abutment at present datum. See WSP 1729 or 1917 for history of changes prior to Oct. 23, 1945.

AVERAGE DISCHARGE.--39 years, 29.3 ft³/s (0.830 m³/s), 21,230 acre-ft/yr (26.2 hm³/yr); median of yearly mean discharges, 23 ft³/s (0.651 m³/s), 16,700 acre-ft/yr (21 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 966 ft³/s (27.4 m³/s) May 12, gage height, 9.70 ft (2.957 m), minimum daily, 0.15 ft³/s (0.004 m³/s) Mar. 22-29.

Period of record: Maximum discharge, 14,100 ft³/s (399 m³/s) Apr. 7, 1952, gage height, 17.03 ft (5.191 m), from rating curve extended above 4,500 ft³/s (127 m³/s) on basis of discharge measurement at gage height 15.09 ft (4.599 m), half of which was indirect measurement of flow over roadway outside of main channel; maximum gage height, 17.10 ft (5.212 m) Apr. 15, 1950; no flow at times.

REMARKS.--Records good. Flow regulated by Bowman-Haley Lake 8 mi (12.9 km) upstream. (See station 06354988.) Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1239: 1908-10, 1913-15(M), 1917(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.90	2.1	1.6	1.3	.75	1.2	.20	288	36	30	2.5	1.1
2	1.0	1.8	1.6	1.3	.70	1.5	.20	273	33	29	2.3	.96
3	1.2	1.5	1.6	1.3	.70	2.0	.20	232	31	28	2.7	1.1
4	1.4	1.5	1.6	1.4	.65	2.5	.25	160	29	27	2.3	1.4
5	1.5	1.5	1.6	1.4	.65	3.0	.25	149	27	25	2.0	1.5
6	1.4	1.4	1.7	1.4	.60	3.0	.30	246	26	23	2.0	1.3
7	1.4	1.4	1.7	1.4	.60	2.5	.40	284	22	21	1.8	1.1
8	1.5	1.3	1.6	1.4	.55	2.5	.50	343	21	19	1.6	1.1
9	1.7	1.3	1.6	1.3	.50	2.0	.50	353	26	18	2.8	1.1
10	1.7	1.3	1.6	1.2	.50	2.0	.80	381	30	16	2.0	1.1
11	1.7	1.3	1.6	.70	.45	1.5	1.0	717	26	14	1.7	1.0
12	1.7	1.2	1.6	.40	.45	1.4	2.0	947	30	12	1.7	1.1
13	1.6	1.5	1.6	.40	.40	1.2	3.0	776	32	10	1.6	1.1
14	1.8	1.3	1.6	.40	.40	1.1	4.0	600	35	9.1	1.8	1.1
15	1.7	1.9	1.5	.40	.35	1.1	5.0	460	36	8.1	2.0	1.1
16	1.7	1.8	1.5	.40	.35	1.1	6.0	357	33	7.2	2.0	1.2
17	1.7	1.6	1.4	.40	.30	1.1	7.3	293	31	6.6	2.0	1.2
18	1.7	1.7	1.4	.50	.30	.94	7.5	230	29	6.6	1.9	1.2
19	1.7	1.7	1.4	.60	.25	1.0	8.0	179	34	8.5	1.9	1.2
20	1.6	1.7	1.4	.80	.25	.81	9.0	147	37	6.5	1.8	1.7
21	1.8	1.7	1.4	1.0	.25	.22	10	118	35	5.5	1.7	1.9
22	1.9	1.6	1.3	1.2	.25	.15	10	104	34	4.4	1.5	1.5
23	1.9	1.6	1.3	1.2	.25	.15	10	97	34	3.8	1.5	1.3
24	2.0	1.6	1.3	1.3	.30	.15	12	87	31	3.7	1.4	1.2
25	1.9	1.6	1.2	1.3	.96	.15	14	82	29	3.8	1.4	1.2
26	1.8	1.6	1.2	1.2	1.3	.15	20	73	36	3.3	2.6	1.2
27	1.6	1.7	1.2	1.0	1.2	.15	27	62	36	3.1	2.0	1.3
28	1.6	1.6	1.2	.90	1.1	.15	51	55	29	2.9	1.7	1.3
29	1.5	1.5	1.2	.85	---	.15	78	49	27	2.7	1.4	1.3
30	1.5	1.6	1.3	.80	---	.20	200	44	29	2.5	1.3	1.3
31	2.0	---	1.3	.80	---	.20	---	39	---	2.6	1.2	---
TOTAL	50.10	46.9	45.1	29.95	15.31	35.27	488.40	8225	924	362.9	58.1	37.16
MEAN	1.62	1.56	1.45	.97	.55	1.14	16.3	265	30.8	11.7	1.87	1.24
MAX	2.0	2.1	1.7	1.4	1.3	3.0	200	947	37	30	2.8	1.9
MIN	.90	1.2	1.2	.40	.25	.15	.20	39	21	2.5	1.2	.96
AC-FT	99	93	89	59	30	70	969	16310	1830	720	115	74
CAL YR 1974	TOTAL	3020.48	MEAN	8.28	MAX	148	MIN	.25	AC-FT	5990		
WTR YR 1975	TOTAL	10318.19	MEAN	28.3	MAX	947	MIN	.15	AC-FT	20470		

GRAND RIVER BASIN

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, N. DAK.

LOCATION.--Lat 46°06'40", long 103°02'20", in SE4NE4 sec. 3, T.130 N., R.99 W., Bowman County, on left bank 46 ft (14 m) downstream from Chicago, Milwaukee, St. Paul, Pacific Railway bridge, 1.8 mi (2.9 km) east of Gascoyne.

DRAINAGE AREA.--15.7 mi² (40.7 km²).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,735 ft (833 m), from topographic map.

EXTREMES.--Current year: Maximum discharge, 257 ft³/s (7.278 m³/s) May 9, gage height, 8.41 ft (2.563 m), no flow for several months.

Period of record: Maximum discharge, 257 ft³/s (7.278 m³/s) May 9, 1975, gage height, 8.41 ft (2.563 m), no flow at times.

REMARKS.--Records poor. Records of chemical analyses and suspended sediment loads for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.30	.12				0	3.5	2.4	1.5	.40	.25
2	.06	.20	.11				0	2.3	2.0	1.2	.40	.11
3	.06	.10	.11				0	1.7	1.7	1.0	.35	.12
4	.06	.09	.11				0	1.4	2.1	.90	.35	.57
5	.06	.08	.11				0	1.0	.42	.80	.32	.42
6	.06	.07	.11				0	30	.45	.70	.27	.72
7	.06	.08	.11				0	82	1.5	.60	.17	.72
8	.06	.09	.10				0	5.4	1.7	.52	.15	.42
9	.06	.10	.09				2.0	82	2.4	.52	.10	.79
10	.06	.12	.09				4.0	179	1.9	.47	.37	.57
11	.06	.12	.09				6.0	56	2.1	.19	.31	.40
12	.06	.12	.09				10	8.6	2.0	.19	.11	.47
13	.05	.12	.09				14	3.8	4.0	.19	.04	.40
14	.05	.10	.09				15	2.4	5.0	.17	.14	.45
15	.05	.08	.08				30	2.1	1.4	.17	.42	.35
16	.04	.08	.08				40	1.6	2.4	.15	.31	.23
17	.04	.10	.08				50	3.6	2.4	.15	.25	.35
18	.04	.12	.08				45	2.9	3.2	.25	.16	.37
19	.04	.15	.08				40	1.1	12	1.0	.34	.63
20	.04	.20	.08				30	2.5	7.2	.80	1.1	1.1
21	.04	.25	.08				20	2.9	2.4	.70	.63	.45
22	.04	.30	.08				10	6.7	1.2	.60	.44	.40
23	.04	.35	.08				5.0	7.8	.29	.50	.69	.50
24	.04	.30	.06				3.3	4.0	.25	.40	.34	.29
25	.04	.25	.02				2.6	1.4	.25	.35	.28	.40
26	.04	.25	.01				4.0	.71	1.0	.30	.21	.34
27	.04	.25	0				2.0	2.2	2.5	.25	.21	.31
28	.04	.20	0				142	2.0	2.0	.20	.32	.40
29	.04	.18	0		---		106	1.7	1.5	.20	.50	.42
30	.04	.16	0		---		11	2.8	2.0	.15	.37	1.1
31	.10	---	0		---		---	2.0	---	.20	.25	---
TOTAL	1.57	4.91	2.23	0	0	0	591.9	507.11	71.66	15.32	10.30	14.05
MEAN	.051	.16	.072	0	0	0	19.7	16.4	2.39	.49	.33	.47
MAX	.10	.35	.12	0	0	0	142	179	12	1.5	1.1	1.1
MIN	.04	.07	0	0	0	0	0	.71	.25	.15	.04	.11
AC-FT	3.1	9.7	4.4	0	0	0	1170	1010	142	30	20	28

WTR YR 1975 TOTAL 1219.05 MEAN 3.34 MAX 179 MIN 0 AC-FT 2420

PEAK DISCHARGE (BASE, 30 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-17	--	--	About 60	5- 7	0300	7.42	166
4-28	1800	8.22	238	5- 9	2000	8.41	257

06355500 NORTH FORK GRAND RIVER NEAR WHITE BUTTE, S. DAK.

LOCATION.--Lat 45°48'10", long 102°21'45", in NE¼NE¼ sec.10, T.21 N., R.14 E., Perkins County, on left bank 100 ft (30 m) upstream from highway bridge, 0.2 mi (0.3 km) upstream from nearest tributary and 9.8 mi (15.8 km) south of White Butte.

DRAINAGE AREA.--1,190 mi² (3,080 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,275 ft (693 m), by barometer. See WSP 1917 for changes prior to June 11, 1951.

AVERAGE DISCHARGE.--30 years, 56.8 ft³/s (1.609 m³/s), 41,150 acre-ft/yr (50.7 hm³/yr); median of yearly mean discharges, 35 ft³/s (0.99 m³/s), 25,400 acre-ft/yr (31.3 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,310 ft³/s (37.1 m³/s) May 11; gage height, 6.14 ft (1.871 m) no flow Oct. 1-23.

Period of record: Maximum discharge, 30,900 ft³/s (875 m³/s) Apr. 16, 1950, gage height, 20.0 ft (6.10 m), from floodmarks, from rating curve extended above 19,000 ft³/s (538 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Bowman-Haley reservoir, capacity, 93,000 acre-ft (115 hm³), 71 mi (114 km) upstream, beginning August 1966.

REVISIONS (WATER YEARS).--WSP 1279: 1947, 1950.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	4.1	3.0	3.5	.50	2.0	5.0	438	98	57	1.1	1.0
2	0	4.6	3.0	3.0	1.0	2.0	6.5	386	91	56	1.3	1.5
3	0	5.3	3.0	2.7	.90	2.0	6.0	354	86	53	1.7	2.0
4	0	5.4	3.5	2.5	.80	2.1	6.0	309	78	54	1.8	2.5
5	0	5.4	4.0	2.3	.70	2.0	6.0	265	68	51	1.8	2.0
6	0	5.7	5.0	2.0	.50	2.0	6.0	244	62	50	1.4	1.0
7	0	5.4	6.0	2.0	.40	1.8	6.5	265	56	47	1.4	.50
8	0	5.4	6.5	1.8	.30	1.6	8.0	832	54	43	1.3	.30
9	0	5.7	7.0	1.3	.20	1.4	10	551	56	38	1.2	.25
10	0	5.4	7.0	1.0	.80	1.0	12	701	62	32	1.0	.21
11	0	5.4	6.0	.30	1.0	1.0	14	1210	60	27	.78	.21
12	0	5.4	6.0	.30	1.0	1.0	30	1010	57	23	.86	.21
13	0	5.2	5.0	.40	1.0	1.5	20	970	64	19	.94	.21
14	0	5.0	5.0	.50	1.0	2.0	24	770	58	16	1.0	.21
15	0	5.0	5.0	.50	1.0	2.2	28	596	58	14	1.0	.14
16	0	5.0	5.5	.50	1.0	2.5	29	481	62	13	1.0	.07
17	0	5.5	6.0	.70	1.2	2.7	49	412	62	12	1.0	.07
18	0	5.9	6.0	.70	1.2	3.0	54	334	63	12	1.0	.14
19	0	5.9	6.0	.60	1.5	3.2	143	291	82	9.6	.94	.14
20	0	5.9	5.5	.80	2.0	3.5	196	256	88	8.9	.86	.14
21	0	5.9	5.0	.80	2.0	3.0	209	231	85	8.2	.90	.14
22	0	6.1	5.0	1.0	2.0	3.0	198	215	90	5.7	.90	.14
23	0	5.8	4.5	1.5	2.0	2.5	179	202	91	5.7	.90	.14
24	.21	5.8	4.0	1.5	2.0	2.0	161	198	83	3.8	.90	.14
25	.28	5.5	4.0	1.5	2.0	1.8	148	211	72	4.8	.80	.14
26	.49	5.6	4.5	1.3	1.7	1.8	140	187	72	4.9	.80	.14
27	.56	5.0	5.0	1.0	2.0	1.8	121	165	69	3.1	.80	.42
28	1.1	4.5	5.0	.80	2.0	1.8	175	150	64	2.0	.80	.42
29	1.6	4.0	4.0	.70	---	2.0	648	130	62	2.8	.90	.42
30	2.3	3.5	4.5	.60	---	4.0	793	116	68	1.9	.90	.56
31	3.6	---	3.5	.50	---	4.5	---	106	---	2.0	.90	---
TOTAL	10.14	158.3	153.0	38.60	33.70	68.7	3431.0	12586	2121	680.4	32.88	15.46
MEAN	.33	5.28	4.94	1.25	1.20	2.22	114	406	70.7	21.9	1.06	.52
MAX	3.6	6.1	7.0	3.5	2.0	4.5	793	1210	98	57	1.8	2.5
MIN	0	3.5	3.0	.30	.20	1.0	5.0	106	54	1.9	.78	.07
AC-FT	20	314	303	77	67	136	6810	24960	4210	1350	65	31
CAL YR 1974	TOTAL	5801.88	MEAN 15.9	MAX 100	MIN 0	AC-FT 11510						
WTR YR 1975	TOTAL	19329.18	MEAN 53.0	MAX 1210	MIN 0	AC-FT 38340						

MISSOURI RIVER MAIN STEM

06439980 LAKE OAHE NEAR PIERRE, S. DAK.

LOCATION.--Lat 44°27'30", long 100°23'29", in NE¼ sec.1, T.111 N., R.80 W., 5th principal meridian, Hughes County, in Pier A of Control Tower No. 1 of powerhouse intake structure of dam on Missouri River, 6.0 mi (9.7 km) northwest of Pierre, 7.1 mi (11.4 km) upstream from Bad River, and at mile 1,072.3 (1,725.3 km).

DRAINAGE AREA.--243,500 mi² (630,700 km²), approximately.

PERIOD OF RECORD.--August 1958 to current year. Prior to October 1967, published as Oahe Reservoir near Pierre.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Jan. 14, 1959, nonrecording gages at various locations upstream from outlet works, Jan. 14, 1959, to Sept. 30, 1962, recorder in Tower No. 1 of outlet works, all at same datum.

EXTREMES.--Current year: Maximum contents, 22,681,000 acre-ft (28,000 hm³) Aug. 22; elevation, 1,617.9 ft (493.14 m), affected by wind; minimum, 17,586,000 acre-ft (21,700 hm³) Oct. 2; elevation, 1,602.1 ft (488.32 m).

Period of record: Maximum contents, 22,681,000 acre-ft (28,000 hm³) Aug. 22, 1975, elevation, 1,617.9 ft (493.14 m), affected by wind; minimum since initial filling, 16,500,000 acre-ft (20,300 hm³) Dec. 21, 1972, elevation, 1,599.2 ft (487.44 m).

REMARKS.--Reservoir is formed by an earthfill dam; storage began in August 1958. Maximum capacity, 23,630,000 acre-ft (29,100 hm³) below elevation 1,620.0 ft (493.78 m), top of spillway gates. Normal maximum, 22,530,000 acre-ft (27,800 hm³) below 1,617.0 ft (492.86 m), of which about 2,390,000 acre-ft (2,950 hm³) is designated for flood control. Inactive storage, 5,538,000 acre-ft (6,830 hm³) below elevation 1,540.0 ft (469.39 m). Dead storage, 2,000 acre-ft (2.47 hm³) below elevation 1,425.0 ft (434.34 m), invert of lowest outlet tunnel. Figures given herein represent elevations at powerhouse intake structure and total contents adjusted for wind effect.

The spillway consists of a gated chute with flat crest at elevation 1,596.5 ft (486.61 m), 8 gates, 50 by 23.5 ft (15.2 x 7.2 m) each; design capacity, 300,000 ft³/s (8,500 m³/s). The outlet works consist of 7 turbines with a generating capacity of 85,000 kilowatts each. Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevation and contents furnished by Corps of Engineers.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30-----	1,602.6	17,740,000	-
Oct. 31-----	1,603.1	17,879,000	+139,000
Nov. 30-----	1,603.7	18,090,000	+211,000
Dec. 31-----	1,505.1	18,499,000	+409,000
CAL YR 1974-----	--	--	+193,000
Jan. 31-----	1,604.7	18,313,000	-186,000
Feb. 28-----	1,606.7	18,976,000	+663,000
Mar. 31-----	1,607.8	19,320,000	+344,000
Apr. 30-----	1,609.8	19,926,000	+606,000
May 31-----	1,612.9	20,987,000	+1,061,000
June 30-----	1,614.6	21,560,000	+573,000
July 31-----	1,616.6	22,256,000	+696,000
Aug. 31-----	1,617.1	22,375,000	+119,000
Sept. 30-----	1,613.5	21,182,000	-1,193,000
WTR YR 1975-----	--	--	+3,442,000

06467600 JAMES RIVER NEAR MANFRED, N. DAK.

LOCATION.--Lat 47°38'40", long 99°49'40", near midpoint of north line sec.15, T.148 N., R.72 W., Wells County, on left upstream wingwall of bridge on county highway, 5 mi (8 km) southwest of Manfred.

DRAINAGE AREA.--253 mi² (655 km²), of which about 197 mi² (510 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1954 to August 1957 (annual maximum only), September 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,605.73 ft (489.427 m) above mean sea level. Prior to Sept. 16, 1957, crest-stage gage only on downstream side of bridge at same datum.

AVERAGE DISCHARGE.--18 years (1957-75), 2.85 ft³/s (0.0807 m³/s), 2,060 acre-ft/yr (2.54 hm³/yr); median of yearly mean discharges, 2.2 ft³/s (0.062 m³/s), 1,600 acre-ft/yr (2.0 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 260 ft³/s (7.36 m³/s) Apr. 16, gage height, 5.25 ft (1.600 m); maximum gage height, 6.80 ft (2.073 m) Apr. 15, from high-water mark; no flow for several months.
Period of record: Maximum discharge, 900 ft³/s (25.5 m³/s) Apr. 10, 1969, gage height, 7.70 ft (2.347 m); no flow for long periods each year.

REMARKS.--Records fair. Records of chemical analyses for the 1975 water year are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						0	0	117	1.5	3.6		
2						0	0	90	1.5	3.1		
3						0	0	67	1.4	2.8		
4						0	0	46	1.3	2.4		
5						0	0	31	1.0	2.0		
6						0	0	20	.94	1.4		
7						0	0	19	.78	1.0		
8						0	0	18	.74	.74		
9						0	0	16	1.8	.42		
10						0	0	12	4.7	.26		
11						0	2.0	11	7.5	.16		
12						0	10	9.4	8.1	.09		
13						0	40	8.5	7.6	.06		
14						0	80	8.0	7.3	.04		
15						.20	125	7.5	6.7	.01		
16						.50	175	6.4	6.2	0		
17						3.0	209	5.5	6.0	0		
18						6.0	154	4.7	5.5	0		
19						5.0	127	4.0	5.3	0		
20						4.6	127	3.8	5.5	0		
21						4.0	126	3.4	5.2	0		
22						3.0	116	3.1	6.0	0		
23						2.0	104	3.4	6.5	0		
24						1.4	84	4.1	9.8	0		
25						.80	63	3.8	8.3	0		
26						.40	67	3.2	5.6	0		
27						.20	110	3.0	4.3	0		
28						.10	176	2.7	3.4	0		
29					---	.05	233	2.3	3.0	0		
30					---	.02	164	1.9	3.7	0		
31		---			---	0	---	1.7	---	0		---
TOTAL	0	0	0	0	0	31.27	2292.0	537.4	137.16	18.08	0	0
MEAN	0	0	0	0	0	1.01	76.4	17.3	4.57	.58	0	0
MAX	0	0	0	0	0	6.0	233	117	9.8	3.6	0	0
MIN	0	0	0	0	0	0	0	1.7	.74	0	0	0
AC-FT	0	0	0	0	0	62	4550	1070	272	36	0	0
CAL YR 1974	TOTAL	1468.98	MEAN	4.02	MAX	248	MIN	0	AC-FT	2910		
WTR YR 1975	TOTAL	3015.91	MEAN	8.26	MAX	233	MIN	0	AC-FT	5980		

PEAK DISCHARGE (BASE, 30 FT³/S).--Apr. 16 (time unknown) 260 FT³/S; Apr. 29 (0900) 250 FT³/S (4.43 FT).

JAMES RIVER BASIN

06467900 BIG SLOUGH AT HAMBERG, N. DAK.

LOCATION.--Lat 47°45'20", long 99°30'42", on line between secs.4 and 5, T.149 N., R.69 W., Wells County, on right bank 30 ft (9 m) upstream from bridge on State Highway 30 and 0.5 mi (0.8 km) south of Hamberg.

DRAINAGE AREA.--60 mi² (155 km²), approximately, of which about 18 mi² (47 km²) is probably noncontributing.

PERIOD OF RECORD.--September 1957 to September 1968, October 1969 to September 1975 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,532.71 ft (467.170 m) above mean sea level.

AVERAGE DISCHARGE.--17 years, 1.40 ft³/s (0.0396 m³/s), 1,010 acre-ft/yr (1.25 hm³/yr); median of yearly mean discharges, 0.3 ft³/s (0.008 m³/s), 220 acre-ft/yr (270,000 m³/yr).

EXTREMES.--Current year: Maximum discharge, 45 ft³/s (1.27 m³/s) Apr. 29, gage height 3.78 ft (1.152 m); no flow for several months.

Period of record: Maximum discharge, 170 ft³/s (4.81 m³/s) July 22, 1965; maximum gage height, 5.46 ft (1.664 m) July 23, 1965; no flow for long periods each year.

Flood of 1969 reached a stage of about 5.7 ft (1.74 m) according to local residents.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	40	1.3	.24		
2							0	38	1.2	.20		
3							0	34	.92	.18		
4							0	32	.92	.16		
5							0	30	.74	.14		
6							0	27	.59	.12		
7							0	25	.48	.10		
8							0	24	.42	.08		
9							0	21	.70	.07		
10							0	19	1.0	.06		
11							0	18	.95	.05		
12							0	17	.90	.04		
13							1.5	15	.85	.03		
14							2.0	14	.80	.02		
15							5.0	12	.76	.01		
16							15	10	.72	0		
17							28	8.8	.68	0		
18							38	7.6	.64	0		
19							43	6.8	.60	0		
20							40	6.0	.68	0		
21							35	5.2	.65	0		
22							32	4.2	.71	0		
23							30	4.8	.84	0		
24							26	4.6	.74	0		
25							24	4.2	.62	0		
26							26	3.5	.50	0		
27							26	2.9	.44	0		
28							32	2.4	.34	0		
29					---		43	2.2	.30	0		
30					---		41	1.8	.26	0		
31		---			---		---	1.5	---	0		---
TOTAL	0	0	0	0	0	0	487.5	442.5	21.25	1.50	0	0
MEAN	0	0	0	0	0	0	16.3	14.3	.71	.048	0	0
MAX	0	0	0	0	0	0	43	40	1.3	.24	0	0
MIN	0	0	0	0	0	0	0	1.5	.26	0	0	0
AC-FT	0	0	0	0	0	0	967	878	42	3.0	0	0

CAL YR 1974 TOTAL 1120.45 MEAN 3.07 MAX 95 MIN 0 AC-FT 2220
WTR YR 1975 TOTAL 952.75 MEAN 2.61 MAX 43 MIN 0 AC-FT 1890

PEAK DISCHARGE (BASE, 20 FT³/S).--Apr. 19 (1200) 44 FT³/S (3.77 FT); Apr. 29 (1400) 45 FT³/S (3.78 FT).

06468170 JAMES RIVER NEAR GRACE CITY, N. DAK.

LOCATION.--Lat 47°33'29", long 98°51'45", in NW¼NW¼ sec.17, T.147 N., R.64 W., Foster County, on left bank on downstream side of county highway bridge and 2.5 mi (4.0 km) northwest of Grace City.

DRAINAGE AREA.--1,060 mi² (2,750 km²), approximately, of which about 650 mi² (1,680 km²) is probably non-contributing.

PERIOD OF RECORD.--June 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,460 ft (445 m), from topographic map.

AVERAGE DISCHARGE.--7 years, 32.2 ft³/s (0.912 m³/s), 23,330 acre-ft/yr (28.8 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 912 ft³/s (25.8 m³/s) May 1, gage height, 9.18 ft (2.798 m); maximum gage height, 9.72 ft (2.963 m), Apr. 17, backwater from ice; no flow for many days.

Period of record: Maximum discharge, 3,100 ft³/s (87.8 m³/s) Apr. 13, 1969, gage height, 12.00 ft (3.658 m); no flow at times most years.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.85	.41	.19	0	.08	884	34	60	3.0	1.1	
2	.01	1.8	.41	.19	0	.06	868	31	55	2.5	.93	
3	.02	1.6	.36	.16	0	.04	812	29	60	2.0	.85	
4	.04	1.3	.36	.16	0	.03	760	27	53	1.6	.77	
5	.08	1.0	.36	.12	0	.02	680	26	47	1.2	.93	
6	.16	.93	.36	.12	0	.01	570	24	45	1.0	.85	
7	.23	.93	.31	.12	0	.01	405	22	40	.90	.85	
8	.31	1.0	.31	.10	0	.01	380	20	36	.90	.77	
9	.36	1.0	.31	.08	0	.01	325	24	37	.80	.77	
10	.23	1.0	.31	.04	0	.05	282	32	37	.80	.70	
11	.16	1.0	.31	.02	0	1.0	238	26	35	.70	.63	
12	.16	.93	.31	0	0	5.0	205	26	32	.70	.57	
13	.16	.85	.31	0	0	20	178	24	28	.70	.51	
14	.16	.70	.31	0	0	25	160	23	24	.70	.51	
15	.14	.70	.31	0	1.0	50	150	22	20	.85	.51	
16	.14	.63	.31	0	3.0	220	137	23	16	.93	.46	
17	.12	.63	.31	0	6.0	550	122	22	17	.93	.46	
18	.12	.63	.31	0	10	580	110	20	18	.93	.41	
19	.12	.63	.27	0	8.0	540	104	18	16	1.0	.41	
20	.12	.57	.27	0	6.0	630	91	20	14	1.0	.36	
21	.12	.57	.27	0	5.0	610	84	19	12	1.0	.36	
22	.10	.57	.27	0	7.0	615	76	28	12	1.0	.31	
23	.10	.57	.27	0	4.0	595	76	25	12	1.1	.31	
24	.10	.57	.27	0	2.0	590	73	32	11	1.3	.31	
25	.08	.57	.27	0	1.0	526	67	51	10	1.2	.27	
26	.08	.57	.27	0	.60	458	61	51	9.0	1.1	.27	
27	.08	.51	.27	0	.30	437	57	61	8.0	1.0	.27	
28	.08	.46	.27	0	.20	454	51	67	7.0	1.0	.31	
29	.10	.46	.23	0	.16	655	45	68	6.0	1.2	.31	
30	.10	.46	.23	0	.12	829	40	66	5.0	1.6	.36	
31	.16	---	.23	0	.10	---	37	---	4.0	1.3	---	
TOTAL	3.95	23.99	9.37	1.30	0	54.48	8390.32	8128	961	786.0	35.94	16.43
MEAN	.13	.80	.30	.042	0	1.76	280	262	32.0	25.4	1.16	.55
MAX	.36	1.8	.41	.19	0	10	829	884	68	60	3.0	1.1
MIN	.01	.46	.23	0	0	0	.01	37	18	4.0	.70	.27
AC-FT	7.8	48	19	2.6	0	108	16640	16120	1910	1560	71	33

CAL YR 1974 TOTAL 16672.76 MEAN 45.7 MAX 1500 MIN 0 AC-FT 33070
WTR YR 1975 TOTAL 18410.78 MEAN 50.4 MAX 884 MIN 0 AC-FT 36520

PEAK DISCHARGE (BASE, 200 FT³/S).--Apr. 17, 700 FT³/S; May 1 (1900) 912 FT³/S (9.18 FT).

JAMES RIVER BASIN

06469000 JAMESTOWN RESERVOIR NEAR JAMESTOWN, N. DAK.

LOCATION.--Lat 46°55'50", long 98°42'23", in SE¼NW¼ sec.24, T.140 N., R.64 W., Stutsman County, on left bank in control house below Jamestown Dam on James River, 1.7 mi (2.7 km) north of Jamestown Post Office, and 3.3 mi (5.3 km) upstream from Pipestem Creek.

DRAINAGE AREA.--1,760 mi² (4,560 km²), approximately, of which about 1,010 mi² (2,620 km²) is probably noncontributing.

PERIOD OF RECORD.--November 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.720 m) above mean sea level; gage readings have been reduced to elevations above mean sea level. June 22, 1959 to June 3, 1971 at site 0.2 mi (0.3 km) upstream at same datum. Prior to June 22, 1959, nonrecording gages at different locations.

EXTREMES.--Current year: Maximum contents, 69,360 acre-ft (85.5 hm³) May 14, elevation, 1,439.75 ft (438.836 m); minimum, 27,850 acre-ft (34.3 hm³) Mar. 13, elevation, 1,429.28 ft (435.645 m).
Period of record: Maximum contents, 103,100 acre-ft (127 hm³) May 1, 1969, elevation, 1,443.60 ft (440.009 m); minimum since initial filling of reservoir, 18,220 acre-ft (22.5 hm³) Mar. 4, 5, 1965, elevation, 1,423.66 ft (433.932 m).

REMARKS.--Reservoir is formed by earth-fill dam, completed Oct. 1, 1953. Closure made May 7, 1953, and filling of dead storage started. Gates initially closed Feb. 8, 1954. Usable capacity, 229,470 acre-ft (283 hm³) between elevations 1,400 ft (426.720 m), sill of outlet and 1,454 ft (443.179 m), crest of spillway. Dead storage below elevation 1,400 ft (426.720 m), 820 acre-ft (1.01 hm³). Maximum design pool, 389,000 acre-ft (480 hm³), elevation, 1,464.6 ft (446.410 m). Figures given herein represent total contents based on capacity table dated Oct. 1, 1965. Reservoir is used for flood control and municipal supply. Records of chemical analyses for the water year 1974 are published in Section 2 of this report. Monthend elevations are adjusted for wind effect.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30-----	1,430.40	30,200	-
Oct. 31-----	1,429.78	28,870	-1,330
Nov. 30-----	1,429.55*	28,400	-470
Dec. 31-----	1,429.49	28,280	-120
CAL YR 1974-----	--	--	+3,370
Jan. 31-----	1,429.40	28,090	-190
Feb. 28-----	1,429.33	27,950	-140
Mar. 31-----	1,429.66	28,620	+670
Apr. 30-----	1,436.92	49,280	+20,660
May 31-----	1,438.30	58,510	+9,230
June 30-----	1,437.66	54,140	-4,370
July 31-----	1,436.78	48,430	-5,710
Aug. 31-----	1,432.67	35,540	-12,890
Sept. 30-----	1,429.89	29,090	-6,450
WTR YR 1975-----	--	--	-1,110

* Estimated

JAMES RIVER BASIN

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06469400 PIPESTEM CREEK NEAR PINGREE, N. DAK.

LOCATION.--Lat 47°10'03", long 98°58'07", in NE¼NE¼NW¼ sec.31, T.143 N., R.65 W., Stutsman County, on right bank on downstream side of State Highway 36 bridge, 3 mi (5 km) west of Pingree.

DRAINAGE AREA.--700 mi² (1,810 km²), of which about 440 mi² (1,140 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,500.63 ft (457.392 m) above mean sea level.

EXTREMES.--Current year: Maximum discharge, 2,400 ft³/s (68.0 m³/s) Apr. 19, gage height, 11.47 ft (3.496 m), backwater from ice; no flow for several months.

Period of record: Maximum discharge, 2,400 ft³/s (68.0 m³/s) Apr. 19, 1975, gage height, 11.47 ft (3.496 m), backwater from ice; no flow at times.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.05	.02			0	.10	630	17	100	8.2	.26
2	.05	.02	.03			0	.08	564	17	108	7.4	.26
3	.08	.02	.05			0	.06	472	17	125	6.6	.19
4	.12	.03	.03			0	.04	356	17	110	5.9	.19
5	.34	.03	.05			0	.03	264	17	89	5.0	.19
6	1.1	.03	.08			0	.02	182	17	68	3.6	.12
7	.98	.03	.05			0	.02	139	16	53	3.2	.19
8	.78	.03	.02			0	.01	129	16	41	3.1	.12
9	.68	.02	.03			0	.01	122	16	34	2.8	.12
10	.68	.02	.08			0	.01	105	18	28	2.3	.12
11	.59	.02	.01			0	.02	89	17	23	1.7	.12
12	.50	.02	.01			0	.05	67	17	19	1.5	.12
13	.42	.02	.01			0	.10	55	16	19	.98	.12
14	.50	.02	.02			0	.50	48	16	17	.68	.12
15	.42	.01	.02			1.0	5.0	41	16	16	.78	.08
16	.26	.01	.01			3.0	175	36	17	14	.68	.08
17	.26	.02	.01			6.0	500	34	17	14	.88	.08
18	.12	.02	.01			9.0	1700	29	18	13	.42	0
19	.05	.02	.01			8.0	2200	29	18	12	.34	0
20	.02	.02	.01			7.0	1900	27	18	11	.26	.02
21	.01	.02	.02			6.0	1620	25	19	11	.26	.05
22	.02	.02	.02			6.0	1270	25	21	10	.26	.34
23	.02	.03	.02			5.0	944	26	24	12	.34	.19
24	.02	.03	.02			2.0	720	25	111	10	.34	.12
25	.01	.05	.02			1.0	546	23	117	10	.19	.08
26	.01	.02	.02			.60	372	22	48	10	.19	.05
27	.01	.01	.02			.30	304	21	32	9.0	.12	.05
28	.01	.01	.01			.20	310	20	30	9.0	.12	.19
29	.01	.01	.01		---	.16	404	19	29	8.8	.26	.26
30	.01	.01	0		---	.14	552	18	84	8.0	.50	.26
31	.12	---	0		---	.12	---	18	---	8.2	.42	---
TOTAL	8.25	.67	.72	0	0	55.52	13523.05	3660	853	1020.0	59.32	4.09
MEAN	.27	.022	.023	0	0	1.79	451	118	28.4	32.9	1.91	.14
MAX	1.1	.05	.08	0	0	9.0	2200	630	117	125	8.2	.34
MIN	.01	.01	0	0	0	0	.01	18	16	8.0	.12	0
AC-FT	16	1.3	1.4	0	0	110	26820	7260	1690	2020	118	8.1

CAL YR 1974 TOTAL 5761.18 MEAN 15.8 MAX 340 MIN 0 AC-FT 11430
WTR YR 1975 TOTAL 19184.62 MEAN 52.6 MAX 2200 MIN 0 AC-FT 38050

PEAK DISCHARGE (BASE 100 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-19	--	--	2,400	6-24	2000	6.97	208
5- 1	0500	8.90	630	6-30	2000	6.49	142

06470000 JAMES RIVER AT JAMESTOWN, N. DAK.

LOCATION.--Lat 46°53'22", long 98°40'58", in NW¼NE¼ sec.6, T.139 N., R.63 W., Stutsman County, on left bank 200 ft (60 m) upstream from Interstate 94 bridge at southeast corner of Jamestown and 3 mi (5 km) downstream from Pipestem Creek.

DRAINAGE AREA.--2,820 mi² (7,300 km²), approximately, of which about 1,650 mi² (4,270 km²) is probably non-contributing.

PERIOD OF RECORD.--June 1929 to September 1934, March to May 1935, August 1937 to September 1939, March 1943 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 1,373.27 ft (418.573 m) above mean sea level. Oct. 1, 1949 to Sept. 30, 1965, at former bridge 0.5 mi (0.8 km) upstream at datum 2.00 ft (0.610 m) higher. See WSP 1729 or 1917 for history of changes prior to Oct. 1, 1949.

AVERAGE DISCHARGE.--40 years (1928-34, 1937-39, 1943-75) 57.9 ft³/s (1.640 m³/s), 41,950 acre-ft/yr (51.7 hm³/yr); median of yearly mean discharge, 25 ft³/s (0.71 m³/s), 18,100 acre-ft/yr (22 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 580 ft³/s (16.4 m³/s) May 20, gage height, 7.14 ft (2.176 m); minimum daily, 1.8 ft³/s (0.051 m³/s) Nov. 23, 24, minimum gage height recorded, 2.25 ft (0.686 m) Mar. 23. Period of record: Maximum discharge, 6,390 ft³/s (181 m³/s), May 13, 1950, gage height, 15.82 ft (4.822 m), site and datum then in use; no flow at times in 1933.

REMARKS.--Records good. Flow regulated by Arrowwood, Jim, and Pipestem Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³). Regulation by Jamestown Reservoir 6 mi (10 km) upstream since 1953 (see station 06469000) and by Pipestem Lake, capacity 147,000 acre-ft (181 hm³), since 1973. Records of chemical analyses and water temperatures for the water year 1975 are published in Section 2 of this report.

REVISIONS (WATER YEARS).--WSP 1239: 1938(M). WSP 1917: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	8.8	3.6	3.4	2.1	4.2	4.5	529	497	77	312	308
2	49	7.1	3.6	3.5	2.1	4.2	4.5	529	499	43	292	307
3	51	5.5	3.9	3.5	2.1	4.5	4.5	531	499	29	291	308
4	55	5.4	3.6	3.6	2.1	4.5	4.5	531	509	21	291	318
5	55	4.9	3.4	3.5	2.1	4.5	4.6	531	499	17	289	313
6	57	4.2	3.4	3.5	2.1	4.5	4.6	529	497	14	291	313
7	51	4.1	3.4	3.5	2.1	4.5	7.1	531	497	12	287	308
8	51	4.1	3.5	3.5	2.1	4.5	9.5	533	500	11	287	257
9	51	4.0	3.5	3.5	2.2	4.5	8.8	529	509	50	284	246
10	51	4.0	3.5	3.2	2.2	4.5	13	531	502	90	285	308
11	48	4.0	3.4	3.1	2.3	4.4	42	531	495	90	284	304
12	49	4.0	3.4	3.1	2.4	4.5	40	533	493	90	281	304
13	50	4.0	3.4	2.8	2.4	4.5	91	529	493	90	273	308
14	55	4.0	3.4	2.6	2.4	6.5	101	526	495	90	285	307
15	55	4.0	3.4	2.5	2.4	12	122	529	495	90	284	313
16	47	4.0	3.4	2.5	2.5	19	216	524	493	150	282	292
17	12	4.0	3.4	2.5	2.6	25	470	524	488	196	288	288
18	6.9	4.1	3.4	2.5	2.8	13	416	524	482	203	288	326
19	6.1	4.1	3.4	2.5	2.8	8.3	275	522	452	185	289	308
20	5.8	4.0	3.4	2.5	2.8	6.3	207	536	197	181	295	299
21	5.8	3.9	3.4	2.5	2.8	5.2	256	524	127	182	294	299
22	5.6	2.7	3.5	2.3	3.1	4.8	202	520	172	184	294	304
23	5.6	1.8	3.5	2.3	3.4	4.5	169	518	128	187	308	299
24	5.4	1.8	3.5	2.3	4.1	4.5	162	522	90	184	298	291
25	5.4	2.8	3.5	2.2	3.9	4.5	216	536	100	185	295	282
26	5.2	3.0	3.5	2.2	3.7	4.5	331	513	109	181	295	274
27	5.2	3.0	3.5	2.1	4.1	4.5	326	506	104	182	302	278
28	5.0	3.7	3.5	2.1	4.2	4.5	425	499	105	180	310	270
29	4.9	3.9	3.4	2.2	---	4.5	540	497	109	184	321	270
30	4.8	3.7	3.4	2.1	---	4.5	535	500	167	193	318	270
31	5.3	---	3.4	2.1	---	4.5	---	499	---	280	310	---
TOTAL	915.0	122.6	107.5	85.7	75.9	198.4	5207.6	16216	10802	3851	9103	8872
MEAN	29.5	4.09	3.47	2.76	2.71	6.40	174	523	360	124	294	296
MAX	57	8.8	3.9	3.6	4.2	25	540	536	509	280	321	326
MIN	4.8	1.8	3.4	2.1	2.1	4.2	4.5	497	90	11	273	246
AC-FT	1810	243	213	170	151	394	10330	32160	21430	7640	18060	17600
CAL YR 1974	TOTAL	20093.2	MEAN	55.0	MAX	470	MIN	1.7	AC-FT	39850		
WTR YR 1975	TOTAL	55556.7	MEAN	152	MAX	540	MIN	1.8	AC-FT	110200		

06470500 JAMES RIVER AT LA MOURE, N. DAK.

LOCATION.--Lat 46°21'20", long 98°18'15", in NE¼NE¼ sec.11, T.133 N., R.61 W., LaMoure County, on left bank 80 ft (24 m) downstream from bridge on State Highway 13, 0.5 mi (0.8 km) west of LaMoure, and 12 mi (19 km) upstream from Cottonwood Creek.

DRAINAGE AREA.--4,390 mi² (11,370 km²), approximately, of which about 2,600 mi² (6,700 km²) is probably non-contributing.

PERIOD OF RECORD.--April to July 1903 (gage-height record only), April 1950 to current year. Gage-height records for 1902-11 are contained in reports of the U.S. Weather Bureau.

GAGE.--Water-stage recorder and rubble-masonry control. Datum of gage is 1,290.00 ft (393.192 m) above mean sea level. See WSP 1729 or 1917 for history of changes prior to Apr. 19, 1950.

AVERAGE DISCHARGE.--25 years (1950-75), 88.4 ft³/s (2,503 m³/s), 64,040 acre-ft/yr (79.0 hm³/yr); median of yearly mean discharges, 59 ft³/s (1.67 m³/s), 42,700 acre-ft/yr (53 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 3,000 ft³/s (85.0 m³/s) Apr. 23, gage height, 13.29 ft (4.051 m); minimum daily, 6.8 ft³/s (0.19 m³/s) Jan. 13, gage height, 7.12 ft (2.170 m).

Period of record: Maximum discharge, 6,800 ft³/s (193 m³/s) Apr. 14, 1969, gage height, 16.17 ft (4.929 m); no flow at times.

Prior to flood of Apr. 14, 1969, a long-time resident said that the flood of May 16, 1950 was the highest since 1881, with stage in either 1942 or 1943 being almost as high owing to large ice jam.

REMARKS.--Records good. Flow regulated by Arrowwood, Jim, and Pipestem Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³). Regulation by Jamestown Reservoir 85 mi (137 km) upstream since 1953 (see station 06469000) and by Pipestem Lake, capacity 147,000 acre-ft (181 hm³), since 1973. Records of chemical analyses and water temperatures for the water year 1975 are published in Section 2 of this report.

REVISIONS.--WSP 1917: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	24	11	10	8.7	10	11	984	502	2310	195	313
2	31	22	11	10	8.8	9.9	11	1040	503	1570	224	300
3	50	24	11	11	9.2	9.9	11	903	494	1240	287	293
4	57	25	11	11	11	9.7	11	778	504	745	298	286
5	45	21	11	11	11	10	11	689	507	546	289	293
6	62	22	11	11	10	9.8	11	623	511	451	283	289
7	52	23	12	11	10	10	12	619	503	359	280	293
8	62	18	11	11	10	9.9	15	605	523	279	299	285
9	54	23	11	12	9.9	9.9	12	586	527	227	292	292
10	54	18	11	13	9.9	9.8	11	581	527	188	294	293
11	67	28	12	15	9.2	10	12	587	528	162	295	269
12	45	12	13	8.9	9.5	10	15	571	522	151	295	280
13	58	21	13	7.8	9.8	9.8	16	558	515	185	286	287
14	56	8.9	13	8.1	9.9	9.9	18	560	516	181	287	287
15	50	12	14	9.0	9.9	11	21	547	521	178	282	298
16	56	14	12	9.0	9.5	13	25	531	522	169	288	292
17	56	14	11	9.3	9.9	17	60	550	515	158	291	293
18	56	14	12	9.5	10	22	202	520	506	157	288	303
19	55	14	11	9.6	9.8	44	790	533	549	173	297	292
20	41	13	11	8.4	9.6	64	1760	537	629	224	307	288
21	39	13	10	9.3	9.9	77	2520	592	547	229	302	295
22	32	14	11	8.0	10	72	2900	564	415	219	300	296
23	20	14	11	8.1	9.5	61	2680	546	302	236	309	291
24	24	13	11	9.8	9.8	32	1990	549	336	245	304	287
25	19	14	11	9.9	11	11	1530	578	293	227	303	284
26	17	15	11	8.9	9.8	10	980	559	245	213	298	285
27	18	14	11	9.2	9.6	11	678	537	219	200	288	290
28	19	12	12	9.3	9.9	11	692	533	226	199	296	289
29	19	11	12	10	---	11	708	528	1030	190	303	292
30	17	11	11	9.2	---	11	743	509	2520	190	309	287
31	25	---	11	8.9	---	11	---	504	---	194	306	---
TOTAL	1296	501.9	355	306.2	275.1	627.6	18456	18901	16557	11995	8975	8722
MEAN	41.8	16.7	11.5	9.88	9.83	20.2	615	610	552	387	290	291
MAX	67	28	14	15	11	77	2900	1040	2520	2310	309	313
MIN	17	8.9	10	7.8	8.7	9.7	11	504	219	151	195	269
AC-FT	2570	996	704	607	546	1240	36610	37490	32840	23790	17800	17300
CAL YR 1974	TOTAL	31373.6	MEAN	86.0	MAX	514	MIN	5.4	AC-FT	62230		
WTR YR 1975	TOTAL	86967.8	MEAN	238	MAX	2900	MIN	7.8	AC-FT	172500		

JAMES RIVER BASIN

06470833 PILOT DRAIN AT OAKES, N. DAK.

LOCATION.--Lat 46°07'30", long 98°05'49", in SW¼SE¼ sec.29, T.131 N., R.59 W., Dickey County, on left bank
1 mi (2 km) south and 0.4 mi (0.6 km) west of Oakes.

DRAINAGE AREA.--5.1 mi² (13.2 km²).

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder.

EXTREMES.--Current year: Maximum discharge, about 8.0 ft³/s (0.23 m³/s), June 29, gage height, 2.20 ft (0.671 m),
estimated; no flow Jan. 12-26.
Period of record: Maximum discharge, about 8.0 ft³/s (0.23 m³/s), June 29, 1975, gage height, 2.20 ft (0.671 m),
estimated; no flow Jan. 12-26, 1975.

REMARKS.--Records fair. Records of chemical analyses for the water year 1975 are published in Section 2 of
this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.32	.51	.16	.11	.04	.07	.04	3.8	1.8	6.5	2.4	3.3
2	.32	.51	.16	.11	.05	.07	.05	3.4	1.8	6.4	2.5	3.2
3	.38	.51	.11	.11	.06	.07	.05	3.7	1.8	4.6	2.6	3.0
4	.38	.51	.11	.11	.07	.07	.06	3.9	1.7	4.5	2.5	3.0
5	.38	.51	.11	.07	.07	.07	.06	4.1	2.0	4.2	2.2	3.0
6	.38	.51	.11	.07	.07	.07	.07	4.1	2.0	4.1	2.0	3.0
7	.38	.51	.11	.07	.07	.07	.07	4.1	2.0	4.0	1.8	3.0
8	.44	.51	.11	.07	.07	.07	.07	2.8	2.0	4.8	2.1	3.0
9	.44	.44	.11	.07	.07	.07	.07	2.5	2.0	4.1	1.8	3.0
10	.44	.44	.11	.07	.07	.07	.07	2.4	2.0	4.4	1.7	3.2
11	.44	.44	.11	.02	.07	.07	.07	2.3	2.0	3.8	1.7	3.0
12	.44	.44	.11	0	.07	.07	.11	2.3	2.0	4.8	2.1	3.0
13	.44	.44	.11	0	.07	.07	.11	2.1	2.0	4.8	2.0	3.0
14	.44	.44	.11	0	.07	.07	.16	2.1	2.0	4.6	2.0	2.6
15	.44	.44	.11	0	.07	.07	.21	2.1	1.9	3.7	1.8	2.6
16	.44	.44	.11	0	.07	.07	.16	2.1	1.8	3.3	1.8	2.5
17	.44	.38	.11	0	.07	.07	.21	2.1	1.8	3.2	1.7	2.2
18	.44	.38	.11	0	.07	.07	.21	2.1	1.8	2.9	1.6	2.1
19	.44	.38	.11	0	.07	.07	.16	2.1	4.2	3.7	1.6	2.0
20	.44	.51	.11	0	.07	.07	.16	2.1	4.1	3.7	6.0	2.0
21	.44	.44	.11	0	.07	.06	.21	2.1	4.1	3.5	4.1	1.5
22	.44	.44	.11	0	.07	.05	.21	2.1	4.1	2.9	4.0	1.7
23	.44	.44	.11	0	.07	.05	.21	2.1	4.1	2.9	3.7	3.5
24	.44	.38	.11	0	.07	.04	.21	2.1	4.2	2.9	3.8	3.5
25	.44	.38	.11	0	.07	.04	.26	2.1	4.2	2.8	3.7	3.4
26	.44	.26	.11	0	.07	.04	.26	2.1	4.1	3.0	3.5	3.3
27	.44	.26	.11	.01	.07	.04	.26	2.1	4.5	2.9	3.4	3.3
28	.51	.16	.11	.01	.07	.04	.26	2.1	5.0	2.9	3.3	3.3
29	.51	.16	.11	.01	---	.04	2.5	1.8	7.0	2.6	3.2	3.2
30	.51	.16	.11	.04	---	.04	2.8	1.8	6.8	2.5	3.2	3.0
31	.51	---	.11	.04	---	.04	---	1.8	---	2.4	3.2	---
TOTAL	13.38	12.33	3.51	.99	1.90	1.88	9.35	78.4	90.8	117.4	83.0	85.4
MEAN	.43	.41	.11	.032	.068	.061	.31	2.53	3.03	3.79	2.68	2.85
MAX	.51	.51	.16	.11	.07	.07	2.8	4.1	7.0	6.5	6.0	3.5
MIN	.32	.16	.11	0	.04	.04	.04	1.8	1.7	2.4	1.6	1.5
AC-FT	27	24	7.0	2.0	3.8	3.7	19	156	180	233	165	169

CAL YR 1974 TOTAL 215.65 MEAN .59 MAX 1.8 MIN .11 AC-FT 428
WTR YR 1975 TOTAL 498.34 MEAN 1.37 MAX 7.0 MIN 0 AC-FT 988

06471000 JAMES RIVER AT COLUMBIA, S. DAK.

LOCATION.--Lat 45°37'05", long 98°19'30", in NE¼NW¼ sec.29, T.125 N., R.62 W., Brown County, on left bank 10 ft (3 m) downstream from highway bridge, 0.8 mi (1.3 km) northwest of Columbia, 2.4 mi (3.9 km) upstream from Chicago and North Western Transportation Co. bridge, 3.6 mi (5.8 km) upstream from Elm River, and 9.4 mi (15.1 km) downstream from Columbia Road Dam.

DRAINAGE AREA.--7,050 mi² (18,300 km²), approximately, of which about 3,000 mi² (7,770 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,275.01 ft (388.623 m) above mean sea level. Prior to Oct. 5, 1957, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--30 years, 107 ft³/s (3.030 m³/s), 77,520 acre-ft/yr (95.6 hm³/yr); median of yearly mean discharges, 57 ft³/s (1.61 m³/s), 41,300 acre-ft/yr (50.9 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,540 ft³/s (43.6 m³/s) July 13; gage height, 15.30 ft (4.663 m) maximum daily reverse flow, 750 ft³/s (21.2 m³/s) June 23, backwater from Elm River.
Period of record: Maximum discharge, 5,420 ft³/s (153 m³/s) May 24, 25, 1950, gage height, 16.89 ft (5.148 m), from graph based on gage readings; maximum gage height, 17.09 ft (5.209 m) Apr. 22, 1969; maximum daily reverse flow, 1,860 ft³/s (52.7 m³/s) Apr. 8, 1952, backwater from Elm River.

REMARKS.--Records good except those for winter periods or periods of backwater from Elm River, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³). Regulation by Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 168 mi (270 km) upstream, since May 1953. Records of chemical analyses and water temperatures for the water year 1975 are published in Section 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	2.5	7.8	5.0	4.5	3.0	0	180	670	758	913	459
2	0	2.6	7.8	5.0	5.0	3.0	1.0	240	657	761	893	450
3	0	3.0	7.6	4.5	5.5	2.0	5.0	310	646	816	874	442
4	0	3.2	7.1	4.5	5.5	2.0	7.0	380	640	895	852	436
5	0	3.4	6.9	4.0	5.0	2.0	8.0	440	636	962	835	437
6	0	3.6	6.9	4.5	4.5	2.0	10	510	627	1010	811	430
7	0	3.7	6.7	5.0	4.5	1.0	25	565	619	1080	780	427
8	0	3.9	6.3	5.0	4.0	1.0	40	619	610	1130	761	421
9	0	3.9	6.5	5.0	4.0	1.0	60	654	615	1200	742	415
10	0	3.7	6.5	3.0	4.5	1.0	100	678	615	1300	728	410
11	0	3.9	6.1	3.0	5.0	0	120	702	612	1410	712	406
12	0	4.1	5.6	4.0	5.0	0	125	720	609	1490	700	405
13	0	4.5	5.6	6.0	5.0	0	115	728	601	1530	680	396
14	0	4.6	5.6	6.5	5.0	0	108	742	600	1530	667	384
15	0	5.2	5.6	6.5	5.0	0	85	750	609	1500	651	373
16	0	5.6	5.4	7.0	5.0	0	69	734	604	1480	639	364
17	0	3.9	5.4	7.0	5.0	0	67	729	601	1390	631	357
18	0	3.7	5.0	7.0	4.0	0	64	732	589	1390	621	361
19	0	8.0	4.5	7.5	4.0	0	63	750	633	1350	610	354
20	0	11	4.5	8.0	4.0	0	63	765	648	1320	603	347
21	0	9.7	4.5	8.0	4.0	0	64	773	550	1260	594	351
22	0	9.7	5.0	8.0	4.0	0	64	778	-40	1230	582	351
23	.04	9.7	5.0	8.0	4.0	0	65	780	-750	1210	570	348
24	.14	9.7	5.0	9.0	4.0	0	20	768	-450	1170	555	346
25	.38	9.7	5.0	8.0	4.0	0	-10	758	-90	1130	535	343
26	.60	9.4	5.5	7.0	3.0	0	-15	747	100	1090	514	336
27	.77	9.4	6.0	6.0	3.0	0	-8.0	724	240	1070	500	331
28	1.1	8.5	6.0	6.0	3.0	0	4.0	716	360	1030	493	328
29	1.4	7.8	6.0	5.0	---	0	45	704	480	989	483	326
30	1.6	7.8	5.5	4.0	---	0	110	692	610	949	475	323
31	2.1	---	5.5	4.0	---	0	---	681	---	924	467	---
TOTAL	8.13	179.4	182.4	181.0	123.0	18.0	1474.0	20049	13451	36354	20471	11457
MEAN	.26	5.98	5.88	5.84	4.39	.58	49.1	647	448	1173	660	382
MAX	2.1	11	7.8	9.0	5.5	3.0	125	780	670	1530	913	459
MIN	0	2.5	4.5	3.0	3.0	0	-15	180	-750	758	467	323
AC-FT	16	356	362	359	244	36	2920	39770	26680	72110	40600	22720
CAL YR 1974	TOTAL	14998.47	MEAN	41.1	MAX	127	MIN	.00	AC-FT	29750		
WTR YR 1975	TOTAL	103947.93	MEAN	285	MAX	1530	MIN	-750	AC-FT	206200		

JAMES RIVER BASIN

06471200 MAPLE RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 45°56'20", long 98°27'08", in SW¼SE¼ sec.33, T.129 N., R.62 W., Dickey County, N. Dak., on left bank 0.4 mi (0.6 km) upstream from State line, 7.8 mi (12.6 km) northeast of Frederick, S. Dak. and 15.7 mi (25.3 km) upstream from mouth.

DRAINAGE AREA.--750 mi² (1,940 km²), approximately, of which about 270 mi² (699 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,365 ft (416 m), from topographic map. Prior to June 14, 1962, nonrecording gage at site 0.4 mi (0.6 km) downstream at datum 0.94 ft (0.287 m) lower.

AVERAGE DISCHARGE.--19 years, 19.5 ft³/s (0.552 m³/s), 14,130 acre-ft/yr (17.4 hm³/yr); median of yearly mean discharges, 11 ft³/s (0.31 m³/s), 8,000 acre-ft/yr (9.9 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 944 ft³/s (26.7 m³/s) July 2, gage height, 8.71 ft (2.655 m); no flow for many days.

Period of record: Maximum discharge, 5,930 ft³/s (168 m³/s) Apr. 11, 1969, gage height, 15.22 ft (4.639 m); maximum gage height, 16.05 ft (4.892 m) Apr. 11, 1969 (backwater from ice); no flow for long periods in each year.

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

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	474	11	573	9.6	4.1
2							0	498	11	924	8.5	3.1
3							0	363	10	748	7.5	3.1
4							0	246	9.9	445	7.0	2.7
5							0	170	9.6	311	6.1	2.4
6							0	121	9.2	246	4.8	2.2
7							0	104	7.8	193	3.5	2.0
8							0	90	7.2	156	4.1	1.5
9							0	76	7.0	130	3.9	1.3
10							0	67	7.0	108	3.3	1.3
11							0	65	6.7	90	3.1	.99
12							0	65	6.1	75	2.9	.74
13							0	58	5.3	67	2.4	.53
14							0	57	4.8	62	2.1	.37
15							0	48	4.8	57	2.0	.37
16							0	35	4.6	50	1.7	.37
17							0	33	4.6	41	1.5	.25
18							.05	31	4.1	37	1.2	.29
19							.05	28	13	32	1.4	.37
20							1.0	26	24	28	1.1	.53
21							5.0	23	583	24	.90	.33
22							300	20	638	23	10	.29
23							500	19	461	23	42	.25
24							642	17	321	22	37	.16
25							504	17	283	22	22	.09
26							388	17	309	20	17	.09
27							311	14	179	19	12	.11
28							321	14	138	16	10	.11
29					---		397	13	120	13	7.2	.16
30					---		367	12	227	11	5.6	.25
31		---			---		---	11	---	11	4.4	---
TOTAL	0	0	0	0	0	0	3736.10	2832	3426.7	4577	245.80	30.35
MEAN	0	0	0	0	0	0	125	91.4	114	148	7.93	1.01
MAX	0	0	0	0	0	0	642	498	638	924	42	4.1
MIN	0	0	0	0	0	0	0	11	4.1	11	.90	.09
AC-FT	0	0	0	0	0	0	7410	5620	6800	9080	488	60

CAL YR 1974 TOTAL 3388.94 MEAN 9.28 MAX 169 MIN 0 AC-FT 6720
WTR YR 1975 TOTAL 14647.95 MEAN 40.7 MAX 924 MIN 0 AC-FT 29450

PEAK DISCHARGE (BASE, 50 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-22	2200	8.28	550	6-21	1700	7.98	661
5- 1	2030	7.55	540	7- 2	1130	8.71	944

06471500 ELM RIVER AT WESTPORT, S. DAK.

LOCATION.--Lat 45°39'22", long 98°29'48", in SW¼NW¼ sec.12, T.125 N., R.64 W., Brown County, on right bank 12 ft (3.7 m) downstream from highway bridge, 0.5 mi (0.8 km) north of Westport, 0.7 mi (1.1 km) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 9.3 mi (15.0 km) downstream from Willow Creek, and 30.4 mi (48.9 km) upstream from mouth.

DRAINAGE AREA.--1,680 mi² (4,350 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,309.3 ft (399.07 m) above mean sea level. Prior to Aug. 6, 1951, and Apr. 8 to Sept. 9, 1952, nonrecording gage 12 ft (3.7 m) upstream at same datum. Aug. 6, 1951, to Apr. 7, 1952, water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--30 years, 47.2 ft³/s (1.337 m³/s), 34,200 acre-ft/yr (42.2 hm³/yr); median of yearly mean discharges, 25 ft³/s (0.71 m³/s), 18,100 acre-ft/yr (22 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 3,950 ft³/s (112 m³/s) June 23, gage height, 14.79 ft (4.508 m); minimum daily, 0.77 ft³/s (0.022 m³/s) Sept. 30.
Period of record: Maximum discharge, 12,600 ft³/s (357 m³/s) Apr. 10, 1969, gage height, 22.11 ft (6.739 m); no flow for many days in most years prior to 1960.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated for Aberdeen municipal water supply by Elm Lake and other small reservoirs upstream, combined capacity, about 16,000 acre-ft (19.7 hm³).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	6.1	1.7	5.2	4.0	4.0	4.5	403	21	338	21	7.7
2	4.0	6.1	1.4	5.5	4.1	3.9	4.5	507	21	716	18	5.8
3	4.3	6.5	1.4	5.5	4.2	3.9	4.6	485	19	1010	15	5.2
4	4.6	6.5	1.4	5.8	4.1	4.0	4.6	385	19	844	12	5.2
5	4.3	6.5	1.3	5.8	4.0	3.9	4.7	299	18	562	9.7	5.2
6	4.6	5.2	1.4	6.1	3.9	3.7	4.7	241	17	418	8.9	4.1
7	4.3	4.9	3.8	6.5	3.9	3.6	4.8	200	16	344	7.7	3.6
8	4.3	5.2	4.6	6.8	3.8	3.5	4.7	165	15	286	8.9	3.2
9	4.3	5.8	4.6	6.1	3.8	3.5	4.6	141	16	244	6.2	3.0
10	4.9	7.6	4.3	4.6	3.8	3.5	4.6	125	16	205	4.9	3.0
11	5.5	9.6	4.3	3.8	3.9	3.5	4.7	114	15	172	4.3	2.8
12	8.0	6.5	3.8	3.8	3.9	3.5	5.0	107	13	146	4.6	3.0
13	11	4.9	3.8	4.0	4.0	3.6	5.0	107	12	120	4.1	2.8
14	12	5.2	3.8	4.3	4.1	3.6	5.0	107	12	109	3.6	2.7
15	10	5.5	3.5	4.3	4.1	3.9	5.5	95	12	95	3.6	2.7
16	12	4.9	3.3	4.4	4.2	4.2	5.5	83	12	86	3.6	2.7
17	12	4.9	3.5	4.4	4.2	4.4	5.5	71	11	76	4.6	2.7
18	12	4.9	3.5	4.5	4.2	4.4	5.0	66	9.7	66	4.1	3.2
19	12	4.9	3.3	4.5	4.3	4.5	5.0	61	124	57	5.2	2.7
20	12	4.9	3.3	4.6	4.3	4.4	6.0	54	82	49	5.8	2.5
21	11	2.6	3.3	4.6	4.3	4.0	10	48	540	44	5.5	2.5
22	8.8	2.0	3.5	4.6	4.4	4.0	39	43	3130	39	4.3	2.5
23	8.4	1.7	3.3	4.6	4.4	5.0	571	48	3600	38	4.3	2.3
24	8.4	1.7	3.5	4.7	4.4	10	776	42	2240	38	4.3	2.5
25	8.4	2.0	3.3	4.6	4.3	25	714	36	1470	31	7.7	1.7
26	8.4	2.0	3.3	4.4	4.2	30	600	30	968	27	25	1.3
27	8.4	1.7	3.5	4.3	4.1	15	424	27	662	26	23	1.2
28	8.4	1.9	4.3	4.3	4.0	9.0	375	25	488	24	19	1.0
29	8.4	1.9	4.6	4.2	---	7.0	383	27	420	21	16	.92
30	8.4	1.7	5.2	4.1	---	5.0	428	25	363	18	12	.77
31	8.8	---	5.5	4.0	---	4.5	---	23	---	18	10	---
TOTAL	245.9	135.8	105.3	148.9	114.9	196.0	4418.5	4190	14361.7	6267	286.9	90.49
MEAN	7.93	4.53	3.40	4.80	4.10	6.32	147	135	479	202	9.25	3.02
MAX	12	9.6	5.5	6.8	4.4	30	776	507	3600	1010	25	7.7
MIN	4.0	1.7	1.3	3.8	3.8	3.5	4.5	23	9.7	18	3.6	.77
AC-FT	488	269	209	295	228	389	8760	8310	28490	12430	569	179
CAL YR 1974	TOTAL	5178.70	MEAN	14.2	MAX	123	MIN	1.2	AC-FT	10270		
WTR YR 1975	TOTAL	30561.39	MEAN	83.7	MAX	3600	MIN	.77	AC-FT	60620		

PEAK DISCHARGE (BASE, 100 FT³/S)

DATE	TIME	G.H.	DISCHARGE	DATE	TIME	G.H.	DISCHARGE
4-23	1700	7.92	848	6-23	0400	14.79	3,950
4-27	2230	7.64	691	7- 3	1200	8.70	1,020

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are usually made in time of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reasons are called measurements at miscellaneous sites.

Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table.

Discharge measurements made at miscellaneous sites during water year 1975

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
Red River of the North Basin						
Wild Rice River	Red River of the North	Lat 46°10'21", long 97°00'37", on south half of east line of sec.12, T.131 N. R.51 W., Richland County, at county highway bridge 1.5 miles west of Mantador.	1,340	1944-50 1952-73	7-3-75	743
Antelope Creek	Wild Rice River	Lat 46°18'52", long 96°44'13", SE¼ sec.20, T.133 N., R.48 W., Richland County, at bridge on former U.S. Highway 81 about 0.5 mile north of Dwight.	267	1944-49 1950-73	7-3-75	1,800
Drain ditch 27	Red River of the North	Lat 46°49'07", long 96°52'17", in SW¼SE¼ sec.28, T.139 N., R.49 W., Cass County, at bridge on county highway 4 miles southeast of Southwest Fargo.	--	1965-67, 1969	7-2-75	522
Drain ditch 21	Sheyenne River	Lat 46°49'10", long 96°55'24", SW¼SW¼ sec.30, T.139 N., R.49 W., Cass County, at bridge on county highway 4 miles south of Southwest Fargo.	--	1965-66, 1969	7-2-75	587
Drain ditch 21	Sheyenne River	Lat 46°53'29", long 96°55'06", north line sec.6, T.139 N., R.49 W., Cass County, at bridge on county highway 1 mile north of West Fargo.	--	1965-67, 1969	7-2-75 7-4-75 7-5-75 7-7-75 7-9-75	543 363 679 900 887
McCleod drain	Park River	Lat 48°23'53", long 97°23'00", in SW¼SW¼SW¼ sec.20, T.157 N., R.52 W., at bridge on county highway, 2 miles southeast of Grafton.	--	1971	5-8-75	.30 ^a
Pembina River	Red River of the North	Lat 48°54'10", long 98°13'40", in SW¼NW¼ sec.29, T.163 N., R.57 W., Cavalier County, at bridge on county highway, 3 miles east of Vang.	--	1962, 1966,70, 1972	12-17-74 4-14-75 6-5-75 9-10-75	11.7 254 813 40
Gassman Coulee	Souris River	Lat 48°13'54", long 101°22'20", in NE¼SW¼ sec.20, T.155 N., R.83 W., Ward County, at culvert on U.S. Highways 2 and 52, 2 miles west of Minot.	61	1969-73	4-29-75 5-1-75	199 41
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.	--	1968-74	4-29-75 5-5-75 5-13-75 5-30-75	3,980 4,940 5,440 3,760
Larson Coulee	Souris River	Lat 48°11'47", long 101°13'51", in NE¼NE¼NE¼ sec.5, T.154 N., R.82 W., Ward County, at bridge on U.S. Highway 52, 4 miles southeast of Minot.	--	1971-74	4-30-75	77
Souris River	Red River of the North	Lat 48°09'11", long 101°09'00", on north line sec.24, T.154 N., R.82 W., Ward County, at bridge on county highway at Logan.	--	1971-74	4-30-75 5-13-75	4,000 4,900
Souris River	Red River of the North	Lat 48°03'50", long 100°55'42", in NE¼ NE¼ sec.22, T.153 N., R.80 W., Ward County, at bridge on State highway in Velva.	--	1966-74	4-30-75 5-13-75 5-27-75	5,040 5,300 4,670

Discharge measurements made at miscellaneous sites during water year 1975--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
Red River of the North Basin						
Souris River	Red River of the North	Lat 48°21'05", long 100°25'08", in SW¼NE¼ sec.10, T.156 N., R.76 W., McHenry County, at bridge on State Highway 14, 0.5 mile northwest of Towner.	--	1971-74	5-7-75 5-14-75	4,440 4,990
Ox Creek	Willow Creek	Lat 48°35'58", long 100°08'44", on west line sec.13, T.159 N., R.74 W., Bottineau County, at bridge on county highway, 7 miles east of Willow City.	--	1969-74	5-2-75 6-25-75	260 41.0
Willow Creek	Souris River	Lat 48°36'33", long 100°17'44", in NW¼SW¼ sec.12, T.159 N., R.75 W., Bottineau County, at bridge on State Highway 60 at Willow City.	--	1969-74	5-2-75 6-25-75	869 91
Oak Creek	Willow Creek	Lat 48°45'53", long 100°28'02", in SW¼SW¼ sec.13, T.161 N., R.76 W., Bottineau County, at bridge on county highway, 4 miles east of Bottineau.	--	1969-74	4-30-75	300
Missouri River Main Stem						
Missouri River	Mississippi River	Lat 48°06'40", long 103°43'00", in SE¼ sec.31, T.154 N., R.101 W., McKenzie County, 5 miles southwest of Williston.	164,500	1897-1965	7-24-75	73,100
James River Basin						
James River	Missouri River	Lat 47°08'30", long 98°47'00", in SW¼SW¼ sec.3, T.142 N., R.64 W., Stutsman County, 6 ¼ miles southeast of Pingree.	1,670	1953-68	9-25-74 10-31-74 11-22-74 3-18-75 5-28-75 8-6-75 9-4-75	33.0 ^a .01 ^a .01 ^a 0 195 6.0 38.0
Pipestem Creek	James River	Lat 46°57'00", long 98°45'26", on south line sec.9, T.140 N., R.64 W., Stutsman County, at bridge on county highway, 2 miles north and 1 mile west of Jamestown.	--	--	5-31-74 6-6-74 6-25-74 7-31-74 9-25-74 10-31-74 11-22-74 12-27-74 1-29-75 3-18-75 4-15-75 4-22-75 5-28-75 7-2-75 8-6-75 9-4-75	125 127 6.24 .28 .35 .50 ^a .36 ^a .32 ^a .86 ^a .97 28.8 158 133 2.84 75.5 65.8
Bear Creek	James River	Lat 46°13'32", long 98°04'17", on south line sec.21, T.132 N., R.59 W., Dickey County, at bridge on State Highway 13, 6 miles north and 1 mile west of Oakes.	--	--	7-2-75 7-9-75	3,330 660

SECTION 2. WATER QUALITY RECORDS

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05053000 WILD RICE RIVER NEAR ABERCROMBIE, N. DAK.

LOCATION.--Lat 46°28'05", long 96°47'00", in NE¼NE¼ sec.36, T.135 N., R.49 W., Richland County, at gaging station at county highway bridge, 0.8 mi (1.3 km) upstream from rubble masonry dam, 3.2 mi (5.1 km) northwest of Abercrombie, and 7 mi (11 km) downstream from Antelope Creek.

DRAINAGE AREA.--2,080 mi² (5,390 km²), of which 590 mi² (1,530 km²) is probably noncontributing.

PERIOD OF RECORD.--Chemical analyses: August 1955 to June 1956, October 1966 to current year.

Specific conductance: October 1966 to current year.

Water temperatures: October 1966 to current year.

EXTREMES.--Current year:

Specific conductance: Maximum daily, 1,800 micromhos Mar. 22-23; minimum daily, 177 micromhos Apr. 16.

Water temperatures: Maximum daily, 28.0°C Aug. 28, 29; minimum daily, freezing point on many days during winter months.

Period of record: 1966 to current year.

Dissolved solids (1966-73): Maximum, 2,840 mg/l Feb. 1-29, 1972; minimum, 182 mg/l, June 15-19, 1967.

Hardness (1966-73): Maximum, 1,200 mg/l Feb. 1-29, 1972; minimum, 110 mg/l June 15-19, 1967.

Specific conductance: Maximum daily, 3,840 micromhos Mar. 7, 1972; minimum daily, 141 micromhos Apr. 10, 1969.

Water temperatures: Maximum daily, 29.5°C Aug. 7, 1973; minimum daily, freezing point on many days during winter period.

REMARKS.--Minimum daily temperature for current year estimated from previous years records.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANENIUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)
APR. 30...	1235	576	16	10	40	10	61	28	35	8.9	178	0
MAY 14...	1815	66	22	--	--	--	110	54	110	7.7	334	0
JUNE 17...	2045	15	14	--	--	--	140	58	140	12	418	0
JULY 04...	1205	3460	14	--	--	--	28	9.3	8.3	7.7	114	0
AUG. 05...	1200	60	26	--	--	--	99	45	78	14	381	0
SEP. 23...	1020	4.8	12	10	30	830	120	59	130	15	339	0

DATE	ALKA- LINITY AS CAC03 (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM
APR. 30...	146	160	18	.1	.77	.23	442	.60	687	270	120	21
MAY 14...	274	400	41	.2	.00	.24	950	1.29	169	500	220	32
JUNE 17...	343	470	62	.3	.18	--	1220	1.66	49.4	590	250	34
JULY 04...	94	32	3.6	.1	.03	.36	176	.24	1640	110	15	13
AUG. 05...	313	230	34	.2	.34	.28	736	1.00	119	430	120	27
SEP. 23...	278	470	48	.3	.01	.13	1060	1.44	13.7	540	270	34

05053000 WILD RICE RIVER NEAR ABERCROMBIE, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	CYANIDE (CN) (MG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BERYLLIUM (BE) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CADMIUM (CD) (UG/L)	DIS- SOLVED CHROMIUM (CR) (UG/L)
APR. 30...	.9	640	7.8	6.5	45	.01	4	0	0	100	0	10
MAY 14...	2.1	1400	7.1	14.0	55	--	--	--	--	290	--	--
JUNE 17...	2.5	1530	8.0	19.0	--	--	--	--	--	370	--	--
JULY 04...	.3	250	7.3	27.0	65	--	--	--	--	40	--	--
AUG. 05...	1.6	1050	7.9	23.5	40	--	--	--	--	230	--	--
SEP. 23...	2.4	1670	7.9	12.0	32	.00	6	<100	<10	350	1	10

DATE	DIS- SOLVED COBALT (CO) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
APR. 30...	0	8	1	40	.2	0	7	1	1	290	1.4	20
MAY 14...	--	--	--	--	--	--	--	--	--	--	--	--
JUNE 17...	--	--	--	--	--	--	--	--	--	--	--	--
JULY 04...	--	--	--	--	--	--	--	--	--	--	--	--
AUG. 05...	--	--	--	--	--	--	--	--	--	--	--	--
SEP. 23...	0	7	6	90	2.4	6	15	0	0	600	4.1	10

SUSPENDED SEDIMENT DISCHARGE MEASUREMENT, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT CHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
JULY 04...	1215	199	1860	92

RED RIVER OF THE NORTH BASIN

05053000 WILD RICE RIVER NEAR ABERCROMBIE, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						---	---	660	1470	272	1020	1280
2						---	---	793	1390	245	1070	1220
3						---	---	800	1350	255	1230	1240
4						---	---	810	1340	261	1140	1240
5						---	---	931	1340	282	1010	1240
6						---	---	1020	1410	330	1230	1240
7						---	---	1020	1290	375	1140	1360
8						---	---	1050	1530	450	1140	1370
9						---	---	1060	1340	518	1240	1410
10						---	---	1200	1500	518	1370	1420
11						---	---	1200	1520	507	1370	1180
12						---	397	1180	1550	565	1370	1480
13						---	390	1260	1570	568	1300	1470
14						---	381	1300	1540	571	1400	1430
15						---	211	1350	1380	599	1420	1380
16						---	177	1380	1560	630	1460	1490
17						---	190	1430	1520	577	1470	1440
18						---	231	1400	1380	665	1530	1480
19						---	241	1410	1450	684	1530	1470
20						---	272	1420	490	725	1530	1490
21						1750	334	1460	403	731	1510	1440
22						1800	417	1500	430	761	1530	1490
23						1800	459	1530	385	690	1480	1440
24						571	459	1550	442	718	968	1440
25						550	492	1550	480	574	955	1440
26						551	442	1560	520	695	838	1490
27						551	582	1570	555	895	1150	1480
28						551	545	1570	570	749	1270	1480
29						551	585	1550	325	745	1270	1490
30						551	653	1520	350	790	1140	1500
31						551	---	1550	---	995	1300	---
MONTH						---	---	1280	1080	579	1270	1400

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	7.0	20.0	21.5	25.5	20.5
2							---	8.0	18.5	24.0	24.0	20.0
3							---	10.0	18.0	26.5	24.0	18.5
4							---	12.0	19.0	27.5	23.5	17.0
5							---	14.0	19.5	27.5	26.0	17.5
6							---	14.0	18.0	28.0	27.0	15.5
7							---	13.0	20.0	28.0	26.0	15.0
8							---	13.0	20.0	27.0	24.0	14.0
9							---	14.0	18.0	25.5	22.5	14.0
10							---	16.0	17.0	24.0	22.0	15.0
11							---	17.0	17.5	24.0	22.0	15.0
12							1.0	16.0	19.0	23.0	22.0	15.0
13							1.0	17.0	18.5	23.0	21.5	15.0
14							1.0	15.5	19.0	23.0	22.0	15.5
15							1.0	13.0	19.0	23.5	21.5	15.0
16							1.5	16.0	20.5	25.0	21.0	15.5
17							2.5	17.0	19.0	25.5	20.0	15.5
18							2.5	18.0	19.0	26.0	20.0	16.0
19							3.0	20.5	20.0	25.5	20.0	13.5
20							3.0	21.0	20.0	25.0	20.5	12.5
21							3.5	17.5	23.0	25.0	21.0	12.5
22							4.0	15.5	23.0	25.0	20.0	12.5
23							4.5	18.0	23.0	23.0	20.5	12.0
24							4.0	19.0	24.0	23.0	20.5	11.5
25							5.0	20.5	25.0	23.0	20.0	12.0
26							5.0	20.0	25.0	24.0	19.0	12.0
27							5.0	19.0	24.0	24.5	19.5	12.0
28							5.5	19.5	24.5	25.0	20.0	12.0
29							5.5	19.0	21.0	26.0	21.0	12.0
30							6.0	18.0	23.5	26.5	20.5	12.0
31							---	18.5	---	27.0	21.0	---
MONTH							---	16.0	20.5	25.0	22.0	14.5

05054020 RED RIVER OF THE NORTH BELOW FARGO, N. DAK.
(National Water-Quality Accounting Network Station)

LOCATION.--Lat 46°55'50", long 96°47'05", in SW¼NE¼ sec.19, T.140 N., R.48 W., Cass County, 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 mi² (17,660 km²), approximately.

PERIOD OF RECORD.--Chemical analyses: July 1969 to current year.

Specific conductance: October 1973 to September 1974.

Water temperatures: October 1973 to September 1974.

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDE- MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
OCT.												
02...	1030	291	14	480	70	50	50	0	38	30	9.8	3.8
23...	1100	307	13	--	--	--	--	--	37	29	11	4.0
NOV.												
20...	1100	360	8.0	--	--	--	--	--	42	29	13	4.3
DEC.												
19...	1100	185	12	230	20	20	0	20	46	35	16	5.3
FEB.												
06...	1100	211	16	--	--	--	--	--	48	38	14	5.1
27...	1145	295	15	--	--	--	--	--	47	30	14	4.8
MAR.												
20...	1100	307	14	--	--	--	--	--	41	31	18	5.9
MAY												
01...	1100	3150	14	--	20	160	150	10	52	26	16	6.2
22...	1145	1280	8.2	--	--	--	--	--	55	36	21	7.1
JUNE												
26...	1130	5000	16	--	--	--	--	--	36	18	15	6.0
AUG.												
07...	1000	770	18	--	--	--	--	--	49	33	21	6.3
27...	1130	734	7.5	2500	20	260	260	0	46	31	14	4.7

DATE	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CaCO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	TOTAL FILT- RABLE RESIDUE (MG/L)
OCT.												
02...	252	--	207	29	6.0	.2	.28	1.2	1.5	.28	256	260
23...	253	--	208	26	6.5	.1	.13	1.3	1.4	.25	255	260
NOV.												
20...	255	1	211	34	8.0	.1	.05	.88	.93	.29	275	--
DEC.												
19...	303	0	249	43	10	.2	.03	1.4	1.4	.39	335	--
FEB.												
06...	301	--	247	35	11	.2	.20	1.6	1.8	.34	328	--
27...	303	0	249	30	10	.1	.29	1.5	1.8	.42	313	--
MAR.												
20...	246	0	202	33	19	.4	.63	1.4	2.0	.55	296	--
MAY												
01...	182	0	149	110	7.3	.1	1.3	1.4	2.7	.29	352	370
22...	251	0	206	110	9.8	.1	.01	2.2	2.2	.24	407	--
JUNE												
26...	145	0	119	69	4.8	.2	.49	1.1	1.6	.40	267	--
AUG.												
07...	250	0	205	92	10	.2	.51	.96	1.5	.33	361	--
27...	252	0	207	49	7.8	.2	.09	1.4	1.5	.32	294	--

RED RIVER OF THE NORTH BASIN

05054020 RED RIVER OF THE NORTH BELOW FARGO, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)
OCT.												
02...	.35	201	14	220	12	9	.3	418	8.2	9.0	6	9.0
23...	.35	211	39	210	4	10	.3	399	8.2	8.0	20	10.4
NOV.												
20...	.37	267	--	220	13	11	.4	400	8.5	1.0	10	12.9
DEC.												
19...	.46	167	--	260	10	12	.4	585	8.5	.0	3	14.0
FEB.												
06...	.45	187	--	280	29	10	.4	545	8.0	.0	3	12.4
27...	.43	249	--	240	0	11	.4	510	7.9	.0	5	12.4
MAR.												
20...	.40	245	--	230	28	14	.5	440	8.1	.0	15	11.7
MAY												
01...	.48	2990	130	240	88	12	.5	454	8.1	6.5	65	9.4
22...	.55	1410	--	290	80	13	.5	480	7.7	18.0	120	5.6
JUNE												
26...	.36	3600	--	160	45	16	.5	391	8.0	23.0	120	5.8
AUG.												
07...	.49	751	--	260	53	15	.6	530	8.4	23.5	50	7.0
27...	.40	583	--	240	36	11	.4	454	8.4	20.0	60	7.6

DATE	PER- CENT SATUR- ATION	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOC- CII (COL- ONIES PER 100 ML)	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS- PENDE- D ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	SUS- PENDE- D CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)
OCT.											
02...	80	824000	82400	14	4	1	3	20	19	1	0
23...	90	3400	660	--	--	--	--	--	--	--	--
NOV.											
20...	94	B10	B7	--	--	--	--	--	--	--	--
DEC.											
19...	96	1	<1	12	4	1	3	<10	<10	0	--
FEB.											
06...	87	<1	825	--	--	--	--	--	--	--	--
27...	88	<1	23	--	--	--	--	--	--	--	--
MAR.											
20...	83	B11200	B3200	--	--	--	--	--	--	--	--
MAY											
01...	78	880	890	22	9	2	7	<10	<9	1	0
22...	61	--	170	--	--	--	--	--	--	--	--
JUNE											
26...	69	B820	B1500	--	--	--	--	--	--	--	--
AUG.											
07...	85	--	--	--	--	--	--	--	--	--	--
27...	85	840	620	--	6	1	5	<10	<9	1	20

DATE	SUS- PENDE- D CHRO- MIUM (CR) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	SUS- PENDE- D COBALT (CO) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	SUS- PENDE- D COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	SUS- PENDE- D LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)
OCT.											
02...	0	0	<50	<50	0	<10	<1	9	<100	<99	1
23...	--	--	--	--	--	--	--	--	--	--	--
NOV.											
20...	--	--	--	--	--	--	--	--	--	--	--
DEC.											
19...	--	<10	<50	<46	4	20	15	5	<100	<96	4
FEB.											
06...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
MAR.											
20...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	0	0	<50	<48	2	40	35	5	<100	<100	0
22...	--	--	--	--	--	--	--	--	--	--	--
JUNE											
26...	--	--	--	--	--	--	--	--	--	--	--
AUG.											
07...	--	--	--	--	--	--	--	--	--	--	--
27...	20	0	50	50	0	20	13	7	<100	<98	2

B - Results based on colony count outside the acceptable range.

05054020 RED RIVER OF THE NORTH BELOW FARGO, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TOTAL MERCURY (HG) (UG/L)	SUS- PENDE MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	SUS- PENDE SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	SUS- PENDE ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
OCT.									
02...	.1	.1	.0	0	0	0	30	20	10
23...	--	--	--	--	--	--	--	--	--
DEC.									
19...	<.1	.0	<.1	2	0	2	30	30	0
MAY									
01...	.0	.0	.0	1	0	1	40	30	8
AUG.									
27...	.0	.0	.0	--	--	0	50	40	10

DATE	DIS- SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS- PENDE GROSS ALPHA AS U-NAT. (UG/L)	DIS- SOLVED GROSS BETA AS CS-137 (PC/L)	SUS- PENDE GROSS BETA AS CS-137 (PC/L)	DIS- SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS- PENDE GROSS BETA AS SR90 /Y90 (PC/L)	DIS- SOLVED RA-226 (RADON METHOD) (PC/L)	DIS- SOLVED NATURAL URANIUM (U) (UG/L)
OCT.								
02...	4.2	3.2	9.2	1.8	7.3	1.6	.09	.6
23...	<3.3	1.0	10	1.6	8.4	1.4	.10	.5
DEC.								
19...	--	--	--	--	--	--	--	--
MAY								
01...	<4.2	7.9	13	9.0	11	7.8	.09	3.2
AUG.								
27...	--	--	--	--	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT AND BED MATERIAL, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDE SEDI- MENT (MG/L)	SUS- PENDE SEDI- MENT DIS- CHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .004 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM
OCT.							
02...	1030	22	17	93	27	69	81
23...	1100	45	37	60	--	--	--
NOV.							
20...	1100	26	25	71	--	--	--
DEC.							
19...	1100	4	2.0	45	--	--	--
FEB.							
06...	1100	9	5.1	66	--	--	--
27...	1145	49	39	85	--	--	--
MAR.							
20...	1100	34	28	73	--	--	--
MAY							
01...	1100	158	1340	97	--	--	--
22...	1145	357	1230	82	--	--	--
JUNE							
26...	1130	436	5890	92	--	--	--
AUG.							
07...	1000	144	299	82	--	--	--
27...	1130	135	268	88	--	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM	BED MAT. FALL DIAM. % FINER THAN 4.00 MM	BED MAT. FALL DIAM. % FINER THAN 8.00 MM
OCT.						
02...	86	89	92	93	96	100

PHYTOPLANKTON

<u>DATE</u>	<u>TOTAL COUNT CELLS/ML</u>	<u>DOMINANT GENERA</u>	<u>PERCENT COMPOSITION</u>	<u>ALGAL GROUP</u>
741002	20,000	<u>Lyngbya</u>	52	Blue-green
		<u>Cyclotella</u>	27	Diatom
741120	46,000	<u>Cyclotella</u>	97	Diatom
741219	16,000	<u>Lyngbya</u>	78	Blue-green
		<u>Cyclotella</u>	16	Diatom
750206	890	<u>Cyclotella</u>	70	Diatom
		<u>Synedra</u>	15	Diatom
750227	250	<u>Cyclotella</u>	79	Diatom
		<u>Nitzschia</u>	18	Diatom
750320	200	<u>Cyclotella</u>	56	Diatom
		<u>Navicula</u>	28	Diatom
		<u>Nitzschia</u>	17	Diatom
750501	6,500	<u>Melosira</u>	38	Diatom
		<u>Cyclotella</u>	25	Diatom
750522	14,000	<u>Cyclotella</u>	63	Diatom
		<u>Melosira</u>	16	Diatom
750626	280	<u>Melosira</u>	36	Diatom
		<u>Nitzschia</u>	27	Diatom
		<u>Navicula</u>	18	Diatom
750807	8,100	<u>Anabaena</u>	36	Blue-green
		<u>Melosira</u>	18	Diatom

PERIPHYTON

Collected by plastic strips samplers placed in the stream approximately one month prior to collection date.

<u>DATE</u>	<u>DRY WEIGHT G/M²</u>	<u>ASH WEIGHT G/M²</u>	<u>CHLOROPHYLL A G/M²</u>	<u>CHLOROPHYLL B G/M²</u>
741023	22	21	7.4	3.0
750320	2.1	1.7	0.1	0.0
750827	5.0	2.9	0.5	0.2

RED RIVER OF THE NORTH BASIN

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05056000 SHEYENNE RIVER NEAR WARWICK, N. DAK.
(Irrigation network station)

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, at gaging station on left bank on downstream side of county highway bridge, 3.3 mi (5.3 km) south of Warwick.

DRAINAGE AREA.--2,070 mi² (5,360 km²), approximately, of which about 1,310 mi² (3,390 km²) is probably noncontributing - includes 227 mi² (588 km²) in closed basins.

PERIOD OF RECORD.--Chemical analyses: January 1951 to current year.

Specific conductance: January 1951 to current year.

Water temperatures: January 1951 to September 1962, October 1963 to September 1964, October 1965 to current year.

EXTREMES.--Current year:

Specific conductance: Maximum daily, 1,150 micromhos June 6-8; minimum daily, 165 micromhos Mar. 17.

Water temperatures: Maximum daily, 27.0°C Aug. 24; minimum daily, freezing point on many days during winter months.

Period of record:

Dissolved solids (1951-73): Maximum, 1,230 mg/l Mar. 21-23, 1955; minimum, 150 mg/l Apr. 5-9, 1960.

Hardness (1951-73): Maximum, 572 mg/l Mar. 20, 1959; minimum, 71 mg/l Apr. 5-9, 1960.

Specific conductance: Maximum daily, 1,940 micromhos Feb. 1, 1955; minimum daily, 165 micromhos Mar. 17, 1975.

Water temperatures (1951-55, 1956-62, 1963-64, 1965-75): Maximum daily, 30.5°C July 1, 1974, minimum daily, freezing point on many days during winter period.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)
OCT. 23...	1530	4.7	6.5	--	--	--	46	30	93	7.1	381	5
NOV. 20...	1200	7.5	--	--	--	--	60	33	80	8.7	416	--
JAN. 06...	1400	6.4	--	--	--	--	64	20	26	3.4	291	--
29...	1100	5.6	--	--	--	--	75	33	89	6.5	475	--
MAR. 20...	1355	141	--	--	--	--	35	15	23	8.5	181	0
MAY 08...	1350	440	17	30	130	50	39	21	67	7.0	229	12
JUNE 11...	1645	111	--	--	--	--	64	44	140	9.6	535	0
JULY 17...	1455	45	--	--	--	--	49	47	170	11	583	0
AUG. 15...	1110	4.5	--	--	--	--	45	34	120	9.7	456	0
SEP. 12...	1230	8.4	9.9	10	20	20	49	37	150	11	527	0

DATE	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM
OCT. 23...	321	100	13	--	.02	.05	511	.70	6.48	240	0	45
NOV. 20...	341	82	17	--	.02	.10	519	.71	10.6	290	0	37
JAN. 06...	239	57	5.7	--	.35	.05	349	.47	6.03	240	3	19
29...	390	120	18	--	.29	.09	605	.82	9.15	320	0	37
MAR. 20...	148	54	7.4	--	1.2	.30	258	.35	98.2	150	1	24
MAY 08...	216	100	9.3	.1	.27	.11	410	.56	487	180	0	43
JUNE 11...	439	170	18	--	.18	.28	757	1.03	227	340	0	46
JULY 17...	478	170	19	--	.02	.34	815	1.11	101	320	0	53
AUG. 15...	374	130	14	--	.05	--	606	.82	7.36	250	0	50
SEP. 12...	432	140	17	.2	.02	.24	713	.97	16.2	280	0	53

RED RIVER OF THE NORTH BASIN

05056000 SHEYENNE RIVER NEAR WARWICK, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	CYANIDE (CN) (MG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BERYL- LIUM (BE) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)
OCT. 23...	2.6	775	9.0	8.5	--	--	--	--	--	--	--	--
NOV. 20...	2.1	730	8.4	3.0	--	--	--	--	--	--	--	--
JAN. 06...	.7	550	7.9	.0	--	--	--	--	--	--	--	--
MAR. 29...	2.2	900	7.7	.0	--	--	--	--	--	--	--	--
MAY 20...	.8	375	7.4	.0	--	--	--	--	--	--	--	--
JUNE 08...	2.2	640	9.2	12.0	50	.00	4	100	0	180	1	0
JULY 11...	3.3	1190	6.7	17.0	--	--	--	--	--	--	--	--
AUG. 17...	4.2	1150	8.4	27.5	--	--	--	--	--	--	--	--
SEP. 15...	3.3	840	8.2	20.0	--	--	--	--	--	--	--	--
12...	3.9	1200	8.3	13.0	40	.00	13	<200	<10	390	1	0

DATE	DIS- SOLVED COBALT (CO) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
OCT. 23...	--	--	--	--	--	--	--	--	--	--	--	--
NOV. 20...	--	--	--	--	--	--	--	--	--	--	--	--
JAN. 06...	--	--	--	--	--	--	--	--	--	--	--	--
MAR. 29...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 20...	--	--	--	--	--	--	--	--	--	--	--	--
JUNE 08...	0	4	1	40	.0	1	2	0	0	180	3.0	2
JULY 11...	--	--	--	--	--	--	--	--	--	--	--	--
AUG. 17...	--	--	--	--	--	--	--	--	--	--	--	--
SEP. 15...	--	--	--	--	--	--	--	--	--	--	--	--
12...	0	4	1	90	.2	1	6	0	0	270	3.3	10

RED RIVER OF THE NORTH BASIN

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05056000 SHEYENNE RIVER NEAR WARWICK, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	518	990	850	810	790	964	528	553	1120	1080	855	661
2	508	1040	860	736	790	865	518	552	1140	1080	870	794
3	512	1060	820	761	870	985	545	541	1140	1080	870	846
4	520	1060	721	796	870	1000	585	513	1140	1080	875	879
5	522	930	775	720	895	855	587	540	1140	1090	870	913
6	520	970	875	681	920	910	632	570	1150	---	880	975
7	578	945	760	725	805	992	635	598	1150	1090	---	1000
8	540	880	780	790	770	997	638	618	1150	1090	---	1020
9	540	891	790	895	810	978	615	632	1130	1080	---	1020
10	580	891	692	795	708	978	628	653	1090	995	865	1040
11	578	880	811	890	738	1040	418	673	1080	1000	875	1030
12	595	880	773	992	738	1040	411	710	1090	1000	---	1050
13	630	855	713	973	738	1000	411	731	1080	1010	870	1060
14	645	840	675	752	750	1010	411	---	1080	1010	870	1050
15	650	829	700	759	740	337	391	810	1100	1010	875	1010
16	690	812	717	832	783	222	304	925	900	1010	871	1060
17	710	704	600	905	792	165	255	925	1080	1010	845	993
18	805	790	650	853	823	230	242	930	1080	---	860	1020
19	780	760	668	741	790	227	242	931	1090	1010	880	1060
20	810	732	757	752	875	390	268	931	1040	1010	---	1040
21	825	732	680	658	840	453	268	980	1040	---	---	1070
22	800	673	653	830	910	458	340	980	985	1010	871	1060
23	800	800	820	692	954	708	370	1010	1040	920	845	1080
24	865	810	663	620	736	785	415	1010	1050	922	855	1010
25	865	792	662	625	760	788	442	---	985	---	855	1020
26	1030	810	685	682	818	568	481	900	985	---	797	1030
27	870	740	740	780	827	562	481	970	1010	---	675	1060
28	1020	832	610	787	870	560	507	840	1040	912	778	979
29	1060	859	692	702	---	500	507	1060	1040	911	688	981
30	845	825	625	715	---	454	507	---	1050	915	845	971
31	1050	---	800	748	---	451	---	1050	---	911	860	---
MONTH	718	854	730	774	811	693	453	791	1070	1010	844	993

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	4.5	0.5	0.0	0.0	0.0	0.0	5.0	18.0	25.0	25.0	18.0
2	6.5	4.0	0.5	0.0	0.0	0.0	0.0	5.5	18.5	24.0	25.0	16.0
3	10.5	2.5	0.5	0.0	0.0	0.0	0.0	7.5	18.5	25.0	25.0	18.0
4	8.0	2.5	0.0	0.0	0.0	0.0	0.0	8.0	18.5	25.0	25.0	17.0
5	7.0	2.5	0.0	0.0	0.0	0.0	0.0	10.0	17.0	25.0	25.0	16.0
6	5.0	2.5	3.0	0.0	0.5	0.0	0.0	11.5	17.5	---	25.0	16.0
7	8.0	3.5	0.0	0.0	0.5	0.0	0.0	12.0	17.5	25.0	---	15.0
8	7.0	4.0	0.0	0.0	0.5	0.0	0.0	10.0	17.5	25.0	25.0	17.0
9	10.0	5.0	0.0	0.0	0.5	0.0	0.0	12.5	17.5	25.0	---	19.0
10	9.0	5.0	1.5	0.0	0.5	0.0	0.0	15.0	17.0	25.0	25.0	16.0
11	7.5	3.0	2.0	0.0	0.5	0.0	0.0	13.0	18.0	25.0	25.0	13.0
12	9.0	2.5	0.5	0.0	0.5	0.0	0.0	16.0	18.0	25.0	---	14.0
13	9.0	1.0	0.0	0.0	0.5	0.0	0.0	16.0	18.0	25.0	25.0	15.0
14	8.0	0.0	0.0	0.0	0.5	0.0	0.0	---	18.0	25.0	25.0	16.0
15	8.0	0.0	0.0	0.0	0.5	1.5	0.0	16.5	18.0	26.0	24.0	17.0
16	9.0	1.0	0.0	0.0	0.5	1.5	0.5	18.5	18.5	26.0	24.0	18.0
17	9.0	1.0	0.0	0.0	0.5	2.0	0.0	18.0	18.5	26.0	25.0	18.0
18	8.0	2.0	0.0	0.0	0.5	0.0	0.5	18.0	20.5	---	23.0	13.0
19	8.5	2.0	0.0	0.0	0.5	0.0	0.0	18.5	20.5	25.0	23.0	12.0
20	8.0	2.0	0.0	0.0	0.5	0.0	1.0	15.5	22.5	25.5	---	10.0
21	8.0	1.5	0.0	0.0	0.5	0.0	1.0	16.0	22.5	---	---	11.0
22	9.0	1.5	0.0	0.0	0.5	0.0	3.5	16.0	22.0	25.0	24.0	14.0
23	9.0	2.5	0.0	0.0	0.0	0.0	0.5	17.0	24.0	23.0	25.0	13.0
24	8.0	1.5	0.0	0.0	0.5	0.0	5.5	19.0	25.0	25.0	27.0	13.0
25	8.0	1.0	0.0	0.0	0.0	0.0	6.5	---	25.0	---	16.0	14.0
26	9.0	1.0	0.0	0.0	0.0	0.0	7.0	17.5	25.0	---	16.5	14.0
27	10.0	0.5	0.0	0.0	0.0	0.0	7.0	17.5	25.0	---	18.0	13.0
28	10.0	0.0	0.0	0.0	0.0	0.0	5.0	19.0	25.0	26.0	19.0	14.0
29	9.0	1.5	0.0	0.0	---	0.0	6.0	18.5	25.0	26.0	17.5	13.0
30	9.0	1.5	0.0	0.0	---	0.0	4.5	---	25.0	26.0	25.5	10.0
31	7.5	---	0.0	0.0	---	0.0	---	18.5	---	26.0	18.0	---
MONTH	8.5	2.0	0.5	0.0	0.5	0.0	1.5	14.5	20.5	25.0	23.0	15.0

RED RIVER OF THE NORTH BASIN

05056400 BIG COULEE NEAR CHURCHS FERRY, N. DAK.

LOCATION.--Lat 48°10'40", long 99°13'15", in NW¼NW¼ sec.12, T.154 N., R.67 W., Benson County, at gaging station at 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 mi² (6,500 km²), approximately, of which about 690 mi² (1,800 km²) is probably noncontributing.

PERIOD OF RECORD.--Chemical analyses: June 1954 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)
OCT. 23...	1100	49	27	--	--	36	75	36	52	19	362	0
NOV. 18...	1400	56	24	--	--	--	87	40	62	23	405	--
JAN. 08...	1030	7.1	36	--	--	--	150	75	110	38	702	--
APR. 14...	1615	17	11	30	60	500	70	23	35	11	124	0
MAY 09...	1325	407	8.6	--	--	--	48	26	32	12	193	0
JUNE 16...	1440	270	11	--	--	--	56	32	38	14	203	0
JULY 17...	1855	140	22	--	--	--	62	36	46	18	258	0
AUG. 13...	1700	32	33	--	--	--	83	42	88	21	393	0
SEP. 11...	1510	11	15	10	30	60	100	51	140	20	329	0

DATE	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)
OCT. 23...	297	140	18	.2	.90	.39	588	.80	77.3	340	39
NOV. 18...	332	160	20	.2	.98	.42	660	.90	101	380	50
JAN. 08...	576	310	45	.2	1.1	.51	1140	1.55	21.9	680	110
APR. 14...	102	200	15	.1	2.8	.22	441	.60	20.2	270	170
MAY 09...	158	120	12	.1	1.0	.16	380	.52	418	230	69
JUNE 16...	167	160	15	.1	.58	.23	446	.61	325	270	110
JULY 17...	212	170	18	.2	1.2	.30	529	.72	200	300	91
AUG. 13...	322	210	29	.3	.78	.52	741	1.01	.64	380	58
SEP. 11...	270	420	43	.2	.05	.10	1000	1.36	29.7	460	190

DATE	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)
OCT. 23...	24	1.2	810	8.6	4.5	50	--	--	--	--	--
NOV. 18...	25	1.4	875	8.2	.0	40	--	--	110	--	--
JAN. 08...	25	1.8	1550	8.3	.0	50	--	--	230	--	--
APR. 14...	21	.9	650	7.2	.5	30	5	0	60	0	0
MAY 09...	22	.9	590	9.5	14.0	55	--	--	70	--	--
JUNE 16...	22	1.0	690	7.0	19.0	45	--	--	40	--	--
JULY 17...	24	1.2	750	8.2	26.5	50	--	--	100	--	--
AUG. 13...	32	2.0	1000	8.6	27.0	45	--	--	190	--	--
SEP. 11...	39	2.8	1690	8.1	12.0	45	12	<200	290	2	10

DATE	DIS- SOLVED COBALT (CB) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
APR. 14...	0	8	1	30	.0	2	1	1	190	3.3	10
SEP. 11...	0	40	3	100	.3	4	5	0	430	4.8	20

RED RIVER OF THE NORTH BASIN

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05057000 SHEYENNE RIVER NEAR COOPERSTOWN, N. DAK.

LOCATION.--Lat 47°26'01", long 98°01'43", in NE4NE4SE4 sec.27, T.146 N., R.58 W., Griggs County, at gaging station at county bridge, 5 mi (8 km) east of Cooperstown.

DRAINAGE AREA.--6,470 mi² (16,760 km²), approximately, of which 5,200 mi² (13,500 km²) probably is noncontributing includes 3,800 mi² (9,800 km²) in closed basins.

PERIOD OF RECORD: Chemical analyses: October 1959 to September 1960, October 1966 to current year.

Specific conductance: October 1966 to current year.

Water temperatures: October 1966 to current year.

EXTREMES.--Current year:

Specific conductance: Maximum daily, 1,200 micromhos Dec. 17; minimum daily, 310 micromhos Apr. 25.

Water temperatures: Maximum daily, 23.0°C Aug. 12, 28; minimum daily, freezing point on several days during January.

Period of record: 1966 to current year.

Dissolved solids (1966-73): Maximum, 1,230 mg/l Mar. 15-18, 1967; minimum, 208 mg/l Mar. 24-25, 1967.

Hardness (1966-73): Maximum, 681 mg/l Mar. 15-18, 1967; minimum, 102 mg/l Mar. 24-25, 1967.

Specific conductance: Maximum daily, 2,170 micromhos Mar. 18, 1967; minimum daily, 255 micromhos Apr. 9, 1971.

Water temperatures: Maximum daily, 28.0°C Aug. 16-17, 1973; minimum daily, freezing point on many days during winter period.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

		INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)
DATE	TIME											
OCT. 03...	1410	4.2	25	0	230	1100	81	34	82	9.2	394	--
31...	1550	18	13	--	--	--	78	31	67	7.1	382	--
DEC. 05...	1430	16	11	--	--	--	92	39	92	7.2	488	--
JAN. 06...	1440	12	22	--	--	--	93	40	88	7.6	500	--
31...	1450	8.8	25	--	--	--	94	36	76	6.8	469	--
MAR. 04...	1210	12	25	--	--	--	98	41	89	6.9	504	0
MAY 07...	1345	1040	17	20	60	80	46	22	49	8.1	230	0
JUNE 05...	1345	170	24	--	--	--	73	42	100	9.1	457	0
AUG. 07...	1755	27	26	--	--	--	68	38	150	10	556	0
SEP. 04...	1420	5.2	24	--	--	--	59	35	100	9.4	419	--

DATE	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOL- VED- PHOS- (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM
OCT. 03...	323	170	17	.2	.15	.14	633	.86	7.18	340	20	34
31...	313	140	17	.2	.09	.08	603	.82	29.3	320	9	31
DEC. 05...	400	150	20	.3	.10	.06	657	.89	28.4	390	0	33
JAN. 06...	410	160	23	.2	.35	.12	678	.92	22.0	400	0	32
31...	385	140	20	.2	.98	.13	633	.86	15.0	380	0	30
MAR. 04...	413	150	22	.3	.34	.11	707	.96	22.9	410	0	31
MAY 07...	189	110	8.0	.1	.47	.11	398	.54	1120	210	17	33
JUNE 05...	375	160	17	.2	.19	.20	673	.92	309	360	0	37
AUG. 07...	456	180	19	.3	.03	.20	767	1.04	55.9	330	0	49
SEP. 04...	344	150	15	.2	.01	.12	617	.84	8.66	290	0	42

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

[illegible]

RED RIVER OF THE NORTH BASIN

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05057000 SHEYENNE RIVER NEAR COOPERSTOWN, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	930	897	931	1040	1030	1160	614	539	990	900	1120	930
2	910	821	1070	1050	1020	---	701	579	985	965	1130	942
3	895	870	1000	1050	1020	1140	---	592	990	981	1140	945
4	875	915	1080	1040	1020	---	710	592	990	981	1150	945
5	890	890	1090	1030	1040	1140	---	583	955	965	1150	940
6	910	873	1110	1040	1040	---	685	585	950	970	1150	931
7	930	850	1150	1040	1040	1160	---	586	975	960	1140	920
8	915	886	1170	1060	1040	---	670	589	955	943	1140	925
9	942	920	1180	1080	1040	---	---	575	980	940	1120	935
10	940	890	1200	1070	1040	1160	471	577	985	940	1130	940
11	847	862	1180	1070	1030	1140	659	587	990	945	1120	890
12	850	925	1160	1060	1030	710	---	624	1020	445	1100	940
13	860	910	1170	1050	1030	---	---	655	1020	953	1080	920
14	861	896	1180	1050	1030	1050	---	675	1020	960	---	920
15	835	900	1180	1050	1030	1030	383	695	1010	968	1060	920
16	855	900	1180	1050	1040	---	370	720	995	985	1060	915
17	855	905	1200	1030	1040	865	---	746	980	992	1030	930
18	860	843	1170	1040	1040	---	381	765	970	1000	1040	920
19	870	830	1150	1010	1070	---	379	805	960	1010	1060	920
20	910	825	1170	1000	1080	560	410	816	1010	1020	1060	920
21	935	860	1120	1000	1090	1040	376	830	945	1020	1060	905
22	900	910	1080	1000	1100	531	---	843	785	1040	1040	938
23	887	890	1100	1000	1100	---	339	870	815	1050	1030	---
24	890	884	1120	997	1110	1000	---	910	995	1070	---	940
25	890	825	1120	1000	1120	---	310	955	1000	1080	1020	945
26	895	870	1120	1000	1120	---	312	945	995	1090	---	953
27	885	915	1080	991	1120	578	345	950	965	1120	1020	935
28	847	960	1110	991	1120	570	---	961	905	1130	1010	925
29	840	895	1100	1000	---	482	---	968	890	1130	1000	940
30	822	940	1100	1000	---	447	492	975	850	1140	965	940
31	860	---	1090	998	---	520	---	---	---	1140	970	---
MONTH	884	885	1120	1030	1060	---	---	736	963	995	1070	930

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	6.0	0.5	0.5	0.5	0.5	1.0	8.0	17.0	---	---	21.0
2	9.0	5.0	0.5	0.5	0.5	---	1.0	8.0	17.0	14.5	---	19.0
3	9.0	5.0	0.5	0.5	0.5	0.5	---	8.0	17.0	16.0	---	17.0
4	9.0	5.0	0.5	0.5	0.5	---	1.0	9.0	17.0	18.0	---	18.5
5	9.0	5.0	0.5	0.5	0.5	0.5	---	11.0	16.0	17.0	---	17.0
6	9.0	4.0	0.5	0.5	0.5	---	1.0	12.0	16.0	19.0	---	16.0
7	9.0	5.0	0.5	0.5	0.5	0.5	---	11.5	17.0	---	---	15.0
8	9.0	4.0	0.5	0.5	0.5	---	1.0	11.0	16.0	16.0	---	6.0
9	9.0	4.0	0.5	0.5	0.5	---	---	13.0	14.0	15.0	---	6.5
10	9.0	4.0	0.5	0.5	0.5	0.5	1.0	16.0	16.0	---	21.0	6.0
11	9.0	3.0	0.5	0.5	0.5	0.5	1.5	13.0	17.0	14.0	22.0	14.0
12	9.0	3.5	0.5	0.5	0.5	0.5	---	14.0	19.0	13.0	23.0	14.0
13	9.0	3.0	0.5	0.5	0.5	---	---	17.0	19.0	14.0	22.0	14.0
14	9.0	2.0	0.5	0.5	0.5	0.5	---	17.0	18.0	16.0	---	15.0
15	9.0	2.0	0.5	0.5	0.5	0.5	2.0	17.0	18.0	---	21.0	17.5
16	9.0	1.0	0.5	0.5	0.5	---	2.0	18.0	18.0	---	21.0	---
17	9.0	1.0	0.5	0.5	0.5	0.5	---	18.0	17.0	---	21.0	16.0
18	8.5	0.5	0.5	0.5	0.5	---	2.0	17.0	17.0	---	18.5	13.0
19	8.0	0.5	0.5	0.5	0.5	---	2.0	20.0	17.0	---	19.0	13.0
20	8.0	0.5	0.5	0.0	0.5	0.5	2.0	18.0	13.5	---	17.0	13.5
21	8.0	0.5	0.5	0.0	0.5	0.5	2.0	17.0	14.5	---	18.0	12.0
22	8.0	0.5	0.5	0.0	0.5	0.5	---	16.0	11.5	---	20.5	11.5
23	7.5	0.5	0.5	0.0	0.5	---	---	16.0	13.5	---	22.0	---
24	7.0	0.5	0.5	0.0	0.5	1.0	7.0	17.0	16.5	---	---	14.0
25	7.0	0.5	0.5	0.0	0.5	---	7.0	18.0	16.0	---	18.0	13.5
26	8.0	0.5	0.5	0.0	0.5	---	7.0	16.0	16.5	---	---	14.0
27	8.0	0.5	0.5	0.0	0.5	1.0	8.0	21.0	15.5	---	19.5	12.5
28	8.0	0.5	0.5	0.0	0.5	1.0	---	17.0	16.0	---	23.0	13.0
29	7.5	0.5	0.5	0.0	---	1.0	---	15.5	15.0	---	20.0	13.0
30	7.0	0.5	0.5	0.0	---	1.0	4.0	14.0	13.5	---	20.0	11.0
31	6.0	---	0.5	0.0	---	---	---	---	---	---	22.0	---
MONTH	8.5	2.5	0.5	0.5	0.5	---	---	15.0	16.0	---	---	14.0

RED RIVER OF THE NORTH BASIN

05058700 SHEYENNE RIVER AT LISBON, N. DAK.

LOCATION.--Lat 46°26'49", long 97°40'44", on line between secs.1 and 2, T.134 N., R.56 W., Ransom County, at gaging station, 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 (kilometre 260.8).

DRAINAGE AREA.--8,190 mi² (21,210 km²), approximately, of which about 5,700 mi² (14,800 km²) is probably noncontributing - includes 3,800 mi² (9,800 km²) in closed basins.

PERIOD OF RECORD.--Chemical analyses: August 1956 to current year.

Specific conductance: August 1956 to current year.

Water temperatures: August 1956 to current year.

EXTREMES.--Current year:

Specific conductance: Maximum daily, 1,140 micromhos Nov. 16; minimum daily, 305 micromhos July 1.

Water temperatures: Maximum daily, 27.0°C July 28-30; minimum daily, freezing point on many days during winter months.

Period of record:

Dissolved solids (1956-58, 1959-73): Maximum, 917 mg/l May 22 to June 15, 1964; minimum, 185 mg/l Apr. 3-5, 1960.

Hardness (1956-73): Maximum, 458 mg/l May 16-31, 1963; minimum, 102 mg/l Apr. 3-5, 1960.

Specific conductance: Maximum daily, 1,450 micromhos Jan. 30, 1962; minimum daily, 243 micromhos Apr. 2, 1960.

Water temperatures: Maximum daily, 32.0°C Aug. 23, 1959; minimum daily, freezing point on many days during winter period.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SiO ₂) (MG/L)	DIS-SOLVED ALUMINUM (AL) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO ₃) (MG/L)	CARBONATE (CO ₃) (MG/L)
OCT. 02...	1300	5.5	13	--	--	--	70	33	99	11	311	0
NOV. 06...	1520	30	13	--	--	--	72	30	96	11	324	--
DEC. 11...	0930	51	3.7	--	--	--	63	37	98	12	369	--
JAN. 31...	1555	47	6.6	--	40	80	64	39	91	10	354	0
MAR. 18...	1725	126	11	--	--	--	59	35	85	13	299	0
MAY 15...	1600	898	11	30	50	30	39	20	39	7.8	211	--
JUNE 17...	0950	158	10	--	--	--	55	25	52	8.3	222	0
JULY 18...	1410	183	17	--	--	--	75	32	60	9.6	278	0
AUG. 06...	0810	135	13	--	--	--	63	25	59	9.8	253	0
SEP. 25...	1450	32	10	0	20	580	84	37	76	10	303	0

DATE	ALKALINITY AS CaCO ₃ (MG/L)	DIS-SOLVED SULFATE (SO ₄) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS PER AC-FT) (MG/L)	DIS-SOLVED SOLIDS PER DAY) (MG/L)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	PERCENT SODIUM
OCT. 02...	255	220	50	.3	.03	.06	657	.89	9.76	310	56	40
NOV. 06...	266	190	49	.3	.11	.04	662	.90	53.6	300	38	40
DEC. 11...	303	190	34	.2	.01	.11	663	.90	91.3	310	7	40
JAN. 31...	290	200	35	.3	--	--	650	.88	82.5	320	30	37
MAR. 18...	245	160	32	.5	1.2	.49	575	.78	196	290	46	38
MAY 15...	173	93	9.5	.1	.82	.14	327	.44	793	180	7	31
JUNE 17...	182	120	18	.2	.36	.08	418	.57	178	240	58	31
JULY 18...	228	170	28	.2	.61	.11	551	.75	272	320	91	28
AUG. 06...	208	150	25	.2	.86	.09	499	.68	182	260	53	32
SEP. 25...	249	240	37	.2	.01	.03	652	.89	56.3	360	110	31

RED RIVER OF THE NORTH BASIN

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05058700 SHEYENNE RIVER AT LISBON, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	CYANIDE (CN) (MG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BERYL- LIUM (BE) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)
OCT. 02...	2.4	1010	8.6	8.5	10	--	--	--	--	340	--	--
NOV. 06...	2.4	1050	7.7	4.5	20	--	--	--	--	270	--	--
DEC. 11...	2.4	1000	7.8	1.0	20	--	--	--	--	210	--	--
JAN. 31...	2.2	980	7.6	.0	--	--	--	--	--	350	--	--
MAR. 18...	2.2	890	7.2	.0	40	--	--	--	--	230	--	--
MAY 15...	1.3	530	--	14.5	50	.01	3	0	0	120	3	0
JUNE 17...	1.5	660	8.0	18.5	32	--	--	--	--	80	--	--
JULY 18...	1.5	800	8.1	26.5	15	--	--	--	--	170	--	--
AUG. 06...	1.6	760	8.2	22.5	20	--	--	--	--	160	--	--
SEP. 25...	1.7	1100	8.3	14.0	8	.00	2	<100	<10	210	2	10

DATE	DIS- SOLVED COBALT (CD) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
OCT. 02...	--	--	--	--	--	--	--	--	--	--	--	--
NOV. 06...	--	--	--	--	--	--	--	--	--	--	--	--
DEC. 11...	--	--	--	--	--	--	--	--	--	--	--	--
JAN. 31...	--	--	--	--	--	--	--	--	--	--	--	--
MAR. 18...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 15...	0	7	1	30	.0	2	6	0	0	200	.0	20
JUNE 17...	--	--	--	--	--	--	--	--	--	--	--	--
JULY 18...	--	--	--	--	--	--	--	--	--	--	--	--
AUG. 06...	--	--	--	--	--	--	--	--	--	--	--	--
SEP. 25...	1	38	40	60	1.6	5	9	1	0	490	2.5	60

RED RIVER OF THE NORTH BASIN
05058700 SHEYENNE RIVER AT LISBON, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1050	1110	1030	942	965	965	852	720	631	305	785	918
2	1040	1090	1040	935	975	975	860	682	622	327	800	952
3	1050	1090	1060	955	992	975	852	690	642	415	798	975
4	1060	1110	1030	941	990	975	861	682	643	625	792	955
5	1050	1060	1090	923	987	975	890	688	640	650	785	932
6	1040	1070	1040	905	987	965	908	673	620	687	785	938
7	1040	1080	1080	905	965	980	900	642	611	687	784	987
8	1040	1090	1090	932	968	965	861	673	600	715	788	980
9	1050	1110	1060	811	962	958	861	648	583	786	784	982
10	1060	1090	1030	870	967	975	845	645	585	697	780	993
11	1080	1100	1010	888	965	905	822	632	638	742	752	976
12	1080	1080	1030	921	970	985	885	580	652	820	750	984
13	1090	1090	1060	921	962	973	885	580	650	808	760	984
14	1110	1120	1020	835	975	998	795	578	681	845	785	985
15	1100	1130	1000	895	970	1000	647	568	665	865	795	950
16	1100	1140	1000	895	972	950	650	580	660	898	795	950
17	1090	1130	1000	915	980	943	630	575	692	878	760	950
18	1080	1080	970	930	980	778	628	570	662	890	744	995
19	1080	1080	953	958	980	778	530	610	745	887	745	995
20	1080	1100	952	930	970	770	530	545	552	888	745	995
21	1080	1090	957	925	980	770	547	552	543	868	744	992
22	1070	1080	958	921	971	772	688	565	580	875	740	991
23	1060	1090	950	971	970	770	802	566	659	880	748	991
24	1060	1100	955	999	980	808	825	563	699	800	740	1080
25	1070	1080	949	1010	970	808	835	583	723	784	762	1080
26	1060	1080	937	1020	985	808	895	620	775	776	920	1080
27	1080	1100	925	1020	982	803	881	660	320	782	900	1080
28	1080	1100	920	985	982	803	755	673	315	800	922	1080
29	1080	1100	935	970	---	810	682	735	311	789	902	1080
30	1090	1080	955	975	---	868	718	750	313	800	925	1080
31	1100	---	940	972	---	870	---	681	---	815	925	---
MONTH	1070	1100	998	935	975	893	777	629	600	754	798	997

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.0	7.5	0.5	0.5	0.0	0.0	0.0	6.5	18.0	23.5	26.0	22.0
2	9.0	7.0	0.5	0.5	0.0	0.0	0.0	7.0	18.0	22.5	26.0	21.5
3	11.0	6.0	0.5	0.5	0.0	0.0	0.0	7.0	18.0	23.5	25.0	20.0
4	9.5	5.0	0.5	0.5	0.0	0.0	0.0	7.5	18.0	25.0	24.5	18.5
5	8.5	4.5	0.5	0.5	0.0	0.0	0.0	8.5	18.5	26.5	22.0	19.0
6	8.0	4.5	1.0	0.5	0.0	0.0	0.0	10.5	19.5	25.0	23.0	18.5
7	9.5	5.0	0.5	0.5	0.0	0.0	0.0	10.0	20.0	25.0	23.5	19.0
8	10.0	5.5	0.5	0.5	0.0	0.0	0.0	10.0	19.0	25.0	23.0	18.5
9	11.5	5.0	1.5	0.5	0.0	0.0	0.0	12.0	17.0	23.0	23.0	17.5
10	13.0	5.0	1.0	0.5	0.0	0.0	0.0	12.0	17.0	22.0	23.5	18.0
11	12.0	4.0	1.0	0.5	0.0	0.0	0.0	13.0	20.0	22.0	23.5	18.0
12	10.5	3.5	1.0	0.0	0.0	0.0	0.0	13.0	18.0	20.5	23.5	18.0
13	9.0	1.5	0.5	0.0	0.0	0.0	2.5	14.0	21.0	22.0	23.0	17.5
14	10.0	0.0	0.5	0.0	0.0	0.0	2.5	14.0	20.0	21.0	23.0	17.5
15	9.0	2.0	0.5	0.0	0.0	0.0	2.5	14.5	20.0	23.0	22.5	17.5
16	10.0	2.0	0.5	0.0	0.0	0.0	2.0	15.0	20.5	25.5	22.5	17.0
17	10.0	1.5	0.5	0.0	0.0	0.0	2.5	15.0	20.0	25.5	22.0	16.5
18	10.0	2.0	0.5	0.0	0.0	0.0	2.0	17.0	21.5	26.0	21.0	16.0
19	10.0	2.0	0.5	0.0	0.0	0.0	2.0	18.5	19.0	25.0	19.0	16.5
20	8.0	1.5	0.5	0.0	0.0	0.0	1.5	18.0	21.0	24.5	18.0	16.0
21	10.0	1.5	0.5	0.0	0.0	0.0	2.0	17.5	22.5	24.0	20.0	15.0
22	10.0	2.0	0.5	0.0	0.0	0.0	1.0	17.5	23.0	23.5	20.5	15.0
23	9.5	1.0	0.5	0.0	0.0	0.0	4.5	18.0	24.5	23.0	22.0	15.5
24	9.5	1.0	0.5	0.0	0.0	0.0	5.5	17.5	25.0	24.0	23.5	14.0
25	9.0	0.5	0.5	0.0	0.0	0.0	7.5	17.5	23.5	25.0	20.0	14.5
26	7.5	1.0	0.5	0.0	0.0	0.0	6.5	18.5	24.0	25.0	21.0	14.0
27	11.0	1.0	1.0	0.0	0.0	0.0	6.5	17.5	24.0	25.5	20.5	13.5
28	10.0	0.5	0.5	0.0	0.0	0.0	6.5	19.0	24.0	27.0	21.0	13.5
29	10.0	0.5	0.5	0.0	---	0.0	5.5	18.5	22.0	27.0	21.5	13.0
30	11.0	0.5	0.5	0.0	---	0.0	5.0	18.0	23.0	27.0	21.0	13.0
31	8.0	---	0.5	0.0	---	0.0	---	15.0	---	26.5	21.0	---
MONTH	10.0	3.0	0.5	0.0	0.0	0.0	2.5	14.0	20.5	24.5	22.0	17.0

05059000 SHEYENNE RIVER NEAR KINDRED, N. DAK.

LOCATION.--Lat 46°37'35", long 97°00'05", in NE¼NW¼ sec.5, T.136 N., R.50 W., Richland County, temperature recorder at gaging station, 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 (kilometre 109.6).

DRAINAGE AREA.--8,800 mi² (22,790 km²), approximately, of which about 5,780 mi² (14,970 km²) probably is noncontributing, includes 3,800 mi² (9,840 km²) in closed basins.

PERIOD OF RECORD.--Chemical analyses: October 1974 to current year (partial-record station).
Water temperatures: November 1970 to current year.

EXTREMES.--Current year:
Water temperatures: Maximum, 26.0°C July 18, 19; minimum, freezing point on many days during November to April.

Period of record:
Water temperatures: Maximum, 28.5°C July 7-8, 19, 20, 1974; minimum, freezing point on many days during winter period.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MANGANESE (MN) (UG/L)	DIS- SOLVED CALCIUM (CA) (MG/L)	DIS- SOLVED MAGNESIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED POTASSIUM (K) (MG/L)
OCT. 02...	1730	26	--	--	--	--	--	--	--
APR. 23...	1025	1850	3.9	190	220	46	16	34	7.9
SEP. 16...	1430	99	15	60	400	81	33	57	6.0

DATE	BICARBONATE (HCO ₃) (MG/L)	CARBONATE (CO ₃) (MG/L)	ALKALINITY AS CaCO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLORIDE (CL) (MG/L)	DIS- SOLVED FLUORIDE (F) (MG/L)	DIS- SOLVED RESIDUE AT 180 C (MG/L)	DIS- SOLVED SOLIDS (TONS AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)
OCT. 02...	--	--	--	--	--	--	--	--	--
APR. 23...	185	0	152	95	15	.1	322	.44	1610
SEP. 16...	317	0	260	160	41	.1	560	.76	150

DATE	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
OCT. 02...	--	--	--	--	825	8.4	7.0	--
APR. 23...	180	29	28	1.1	500	7.8	1.5	1400
SEP. 16...	340	78	26	1.3	1040	8.3	15.0	80

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT CHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
JULY 03...	1530	822	9990	90

RED RIVER OF THE NORTH BASIN
05059000 SHEYENNE RIVER NEAR KINDRED, N. DAK.--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.0	8.0	---	---	0.0	0.0	0.0	0.0	0.5	0.0	---	---
2	8.0	6.5	---	---	0.0	0.0	0.0	0.0	0.5	0.5	---	---
3	8.5	8.5	---	---	0.0	0.0	0.0	0.0	0.5	0.5	---	---
4	8.5	8.0	---	---	0.0	0.0	0.0	0.0	0.5	0.5	---	---
5	7.5	7.5	3.0	3.0	0.0	0.0	0.0	0.0	0.5	0.5	---	---
6	7.5	7.5	3.0	2.5	0.0	0.0	0.0	0.0	1.0	0.5	---	---
7	---	---	2.5	2.5	0.0	0.0	0.0	0.0	1.0	1.0	---	---
8	---	---	3.0	2.5	0.0	0.0	0.0	0.0	1.0	1.0	---	---
9	---	---	3.5	3.0	0.0	0.0	0.0	0.0	1.0	1.0	---	---
10	---	---	3.5	2.5	0.0	0.0	0.0	0.0	1.0	1.0	---	---
11	---	---	3.0	2.5	0.0	0.0	0.0	0.0	1.0	0.0	---	---
12	---	---	2.5	2.5	0.0	0.0	0.0	0.0	0.5	0.5	---	---
13	---	---	2.5	1.5	0.0	0.0	0.0	0.0	0.5	0.5	---	---
14	---	---	1.5	1.0	0.0	0.0	0.0	0.0	0.5	0.5	---	---
15	5.5	5.5	1.0	1.0	0.0	0.0	0.0	0.0	0.5	0.5	---	---
16	---	---	1.0	0.5	0.0	0.0	0.0	0.0	0.5	0.5	---	---
17	---	---	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
18	5.0	5.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	---	---	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	---	---	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	---	---	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	---	---	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	---	---	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	---	---	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	---	---	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	---	---	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	---	---	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	3.5	3.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	---	---	0.0	0.0
30	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	---	---	0.5	0.0
31	3.5	3.5	---	---	0.0	0.0	0.0	0.0	---	---	0.5	0.5
MONTH	---	---	3.5	0.0	0.0	0.0	0.0	0.0	1.0	0.0	---	---

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	0.5	0.5	6.5	6.5	17.5	17.0	---	---	24.5	24.5	20.0	20.0
2	0.5	0.5	7.0	6.5	17.5	17.5	---	---	24.5	23.5	20.5	20.0
3	0.5	0.0	8.0	7.0	17.5	16.5	---	---	23.5	23.0	20.5	20.0
4	0.0	0.0	9.0	8.0	18.0	17.5	---	---	22.5	22.0	20.0	18.0
5	---	---	10.0	9.0	18.5	18.0	24.5	24.0	22.5	22.0	18.0	17.5
6	---	---	10.0	10.0	18.5	18.0	24.0	24.0	22.0	21.0	---	---
7	---	---	10.0	10.0	19.0	18.5	24.0	24.0	22.0	21.5	---	---
8	---	---	10.0	10.0	19.0	18.5	24.5	23.5	21.5	21.0	---	---
9	---	---	11.0	10.0	18.5	18.0	23.5	22.5	21.0	21.0	---	---
10	---	---	12.0	11.0	18.0	17.5	22.5	22.0	21.0	21.0	---	---
11	1.0	0.5	13.0	12.0	17.5	17.5	22.0	21.5	21.0	20.0	---	---
12	0.5	0.5	14.0	13.0	18.5	17.5	22.0	21.0	20.0	19.5	---	---
13	0.5	0.5	13.5	13.5	---	---	21.0	21.0	21.0	20.5	---	---
14	0.5	0.5	13.5	13.5	---	---	21.5	21.0	21.0	20.5	---	---
15	0.5	0.5	14.0	13.5	---	---	23.0	21.5	21.0	20.5	---	---
16	0.5	0.5	14.5	14.0	---	---	24.0	23.0	21.0	20.5	16.0	15.0
17	0.5	0.5	15.0	14.5	---	---	25.5	24.0	21.0	20.0	16.0	16.0
18	0.5	0.5	17.0	15.0	19.5	19.5	26.0	25.5	20.0	19.5	16.0	16.0
19	0.5	0.5	18.0	17.0	---	---	26.0	25.5	19.5	18.5	16.0	14.0
20	0.5	0.0	18.0	18.0	---	---	25.0	24.5	18.5	17.5	14.0	12.5
21	0.5	0.5	18.0	18.0	---	---	24.5	24.5	18.0	17.5	12.5	12.0
22	2.0	1.5	18.0	17.5	---	---	24.5	24.0	18.0	18.0	12.0	12.0
23	1.5	1.5	17.0	17.0	---	---	23.5	23.0	18.0	17.5	12.0	12.0
24	2.0	1.5	17.5	17.0	---	---	23.5	23.0	19.5	17.5	12.0	12.0
25	4.0	2.0	18.0	17.5	---	---	22.5	22.0	20.5	19.5	12.0	12.0
26	6.0	4.5	18.0	18.0	---	---	22.5	22.0	20.5	19.5	12.0	12.0
27	6.5	6.0	18.0	17.5	---	---	23.0	22.5	19.5	18.0	12.0	12.0
28	6.5	6.5	17.5	17.0	---	---	24.0	23.0	18.0	17.5	12.0	12.0
29	6.5	6.5	17.0	17.0	---	---	25.0	24.0	18.5	17.5	12.0	12.0
30	6.5	6.5	17.0	16.5	---	---	25.5	24.0	20.0	19.0	12.0	12.0
31	---	---	16.5	16.5	---	---	25.5	24.5	20.0	20.0	---	---
MONTH	6.5	0.0	18.0	6.5	---	---	26.0	21.0	24.5	17.5	---	---

RED RIVER OF THE NORTH BASIN

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05064900 BEAVER CREEK NEAR FINLEY, N. DAK.
(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, at gaging station on right bank 500 ft (150 m) upstream from bridge on county road and 7 mi (11 km) northeast of Finley.

DRAINAGE AREA.--160 mi² (410 km²), approximately.

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LITY AS CACO ₃ (MG/L)
NOV. 22...	1030	.42	16	--	--	160	55	100	11	444	0	364
MAR. 20...	1730	10	15	1600	520	57	28	33	13	187	0	153
APR. 12...	1630	70	--	--	--	--	--	--	--	--	--	--
19...	1615	77	--	--	--	--	--	--	--	--	--	--
MAY 01...	1730	82	19	--	--	93	43	75	7.1	206	0	169
22...	1700	2.6	8.3	--	--	150	56	130	12	380	--	312
JUNE 26...	1650	10	20	--	--	76	31	49	5.5	253	0	208

DATE	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	TOTAL FILT- RABLE RESIDUE (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)
NOV. 22...	430	44	.2	.02	.11	1140	--	1.55	1.29	--	630	260
MAR. 20...	150	14	.3	1.7	.55	441	--	.60	11.9	--	260	100
APR. 12...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 01...	360	16	.1	5.0	.17	787	870	1.07	174	37	410	240
22...	530	25	.2	.00	.04	1220	--	1.66	8.56	--	610	290
JUNE 26...	190	10	.2	.24	.25	534	--	.73	14.4	--	320	110

DATE	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOC- CI (COL- ONIES PER 100 ML)	CYANIDE (CN) (MG/L)	TOTAL ALORIN (UG/L)	ALDRIN IN BOTTOM MA- TERIAL (UG/KG)
NOV. 22...	25	1.7	1480	8.4	.0	13.2	<1	810	867	--	--	--
MAR. 20...	21	.9	630	8.1	.0	12.0	820	190	81600	.00	--	--
APR. 12...	--	--	410	--	.0	--	--	--	--	--	--	--
19...	--	--	470	8.3	.5	--	--	--	--	--	--	--
MAY 01...	28	1.6	1090	8.2	6.5	11.0	80	852	130	--	--	--
22...	31	2.3	1500	--	17.0	10.0	81200	--	70	--	.00	.0
JUNE 26...	25	1.2	810	8.0	26.0	7.7	1300	1700	590	--	--	--

DATE	TOTAL CHLOR- DANE (UG/L)	CHLOR- DANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDD (UG/L)	DDD IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELORIN (UG/L)	DI- ELORIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ENDRIN (UG/L)
MAY 01...	--	--	--	--	--	--	--	--	--	--	--	--
22...	.0	0	.00	.0	.00	.0	.00	.0	.00	.00	.0	.00
JUNE 26...	--	--	--	--	--	--	--	--	--	--	--	--

B - Results based on colony count outside the acceptable range.

RED RIVER OF THE NORTH BASIN

05064900 BEAVER CREEK NEAR FINLEY, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	ENDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR (UG/L)	HEPTA- CHLOR IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	HEPTA- CHLOR EPOXIDE IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL PCB (UG/L)	PCB IN BOTTOM MA- TERIAL (UG/KG)
MAY 01...	--	--	--	--	--	--	--	--	--	--	--	--
22...	.0	.00	.0	.00	.0	.00	.0	.00	.00	.00	.0	0
JUNE 26...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	TOTAL TOX- APHRNE (UG/L)	TOX- APHRNE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)
MAR. 20...	--	--	--	--	--	4	<100	<10	10	<10	<100	.1
MAY 01...	--	--	--	--	--	--	--	--	--	--	--	--
22...	0	0	.00	.00	.00	--	--	--	--	--	--	--

DATE	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS- PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS- SOLVED GROSS BETA AS CS-137 (PC/L)	SUS- PENDED GROSS BETA AS CS-137 (PC/L)	DIS- SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS- PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS- SOLVED RA-226 RADON METHOD (PC/L)	DIS- SOLVED NATURAL URANIUM (U) (UG/L)
MAR. 20...	0	<10	10	--	--	--	--	--	--	--	--
MAY 01...	--	--	--	46	1.8	23	9.6	19	7.8	.05	16
22...	--	--	--	--	--	--	--	--	--	--	--

SUSPENDED SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)
NOV. 22...	1030	71	.08
MAR. 20...	1730	48	1.3
APR. 19...	1615	185	38
MAY 01...	1730	42	9.3
JUNE 26...	1650	83	2.2

05083500 RED RIVER OF THE NORTH AT OSLO, MINN.
(National Water-Quality Accounting Network Station)

LOCATION.--Lat 48°11'40", long 97°08'30", in SW¼SW¼ sec.36, T.155 N., R.51 W., in Walsh County, on interstate highway bridge at Oslo, and at mile 271.2 (kilometre 436.4).

DRAINAGE AREA.--31,200 mi² (80,800 km²) approximately, includes 3,800 mi² (9,840 km²) in closed basins.

PERIOD OF RECORD.--Chemical analyses: March 1973 to current year.

REMARKS.--Discharge obtained by hydrographic comparison of stations 05082500 Red River of the North at Grand Forks and 05092000 Red River of the North at Drayton.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
OCT.												
01...	1300	1600	7.2	660	30	60	60	0	52	22	15	3.5
24...	1100	2140	7.8	--	--	--	--	--	49	20	12	3.1
NOV.												
21...	1310	1880	7.9	--	--	--	--	--	56	21	19	4.3
JAN.												
07...	1130	1300	10	400	10	40	10	30	58	23	21	4.3
29...	1100	1300	11	--	--	--	--	--	56	22	13	3.7
FEB.												
26...	1030	1470	11	--	--	--	--	--	52	23	14	3.7
MAR.												
19...	1030	1510	11	--	--	--	--	--	54	26	16	4.2
APR.												
30...	1100	38400	13	4800	30	210	190	20	49	19	12	5.7
MAY												
21...	1030	7800	8.1	--	--	--	--	--	61	29	20	5.3
JUNE												
27...	1100	12000	14	--	--	--	--	--	47	20	15	5.0
JULY												
15...	0940	42400	--	--	--	--	--	--	--	--	--	--
AUG.												
08...	1000	3570	16	--	--	--	--	--	58	27	18	5.4
26...	1130	2530	13	2300	30	180	170	10	53	24	18	5.1
SEP.												
30...	1100	2180	4.4	--	--	--	--	--	46	19	10	2.9

DATE	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CaCO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)
OCT.											
01...	220	--	180	43	13	.2	.01	1.2	1.2	.21	275
24...	219	--	180	31	11	.1	.00	1.1	1.1	.14	258
NOV.											
21...	243	0	199	49	19	.1	.00	1.4	1.4	.44	322
JAN.											
07...	269	--	221	46	20	.3	.13	.93	1.1	.16	329
29...	265	--	217	37	9.4	.1	.07	.76	.83	.08	299
FEB.											
26...	267	0	219	34	8.4	.1	.46	1.1	1.6	.20	289
MAR.											
19...	263	0	216	36	13	.3	.35	.82	1.2	.18	308
APR.											
30...	162	0	133	77	6.6	.2	2.7	2.7	5.4	.28	292
MAY											
21...	239	0	196	90	12	.2	.37	1.2	1.6	.26	374
JUNE											
27...	177	0	145	75	7.5	.2	.63	1.9	2.5	.33	290
JULY											
15...	--	--	--	--	--	--	--	--	--	--	--
AUG.											
08...	251	0	206	68	13	.2	.46	1.7	2.2	.34	364
26...	243	0	199	46	14	.1	.28	1.5	1.8	.54	318
SEP.											
30...	216	0	177	30	5.5	.1	.02	2.3	2.3	.12	248

RED RIVER OF THE NORTH BASIN

05083500 RED RIVER OF THE NORTH AT OSLO, MINN.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)
OCT.											
01...	.37	1190	220	40	13	.4	420	8.2	9.0	10	9.6
24...	.35	1490	200	20	11	.4	405	8.3	7.0	20	10.8
NOV.											
21...	.44	1630	230	27	15	.6	463	8.4	.0	30	13.6
JAN.											
07...	.45	1160	240	19	16	.6	575	7.9	.0	5	11.8
29...	.41	1050	230	13	11	.4	435	7.8	.0	3	9.6
FEB.											
26...	.39	1150	220	6	12	.4	500	7.9	.0	3	10.8
MAR.											
19...	.42	1260	240	26	12	.4	440	7.9	.0	5	10.8
APR.											
30...	.40	30300	200	68	11	.4	370	7.8	6.0	100	9.4
MAY											
21...	.51	7880	270	76	14	.5	500	7.7	17.0	80	7.4
JUNE											
27...	.39	9400	200	55	14	.5	410	8.0	23.5	130	5.2
JULY											
15...	--	--	--	--	--	--	--	--	22.0	--	--
AUG.											
08...	.50	3510	260	50	13	.5	525	8.2	22.5	75	6.8
26...	.43	2170	230	32	14	.5	465	8.2	20.0	3	7.6
SEP.											
30...	.34	1460	190	16	10	.3	400	7.9	12.0	25	9.4

DATE	PER- CENT SATUR- ATION	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOCCI (COL- ONIES PER 100 ML)	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS- PENDEO ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	SUS- PENDEO CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)
OCT.											
01...	85	73	820	16	4	2	2	10	10	0	0
24...	91	8150	191	--	--	--	--	--	--	--	--
NOV.											
21...	96	250	433	--	--	--	--	--	--	--	--
JAN.											
07...	83	--	1900	14	2	1	1	<10	<8	2	0
29...	67	--	--	--	--	--	--	--	--	--	--
FEB.											
26...	76	<1	160	--	--	--	--	--	--	--	--
MAR.											
19...	76	2000	2000	--	--	--	--	--	--	--	--
APR.											
30...	77	120	700	16	7	4	3	<10	<10	0	0
MAY											
21...	78	240	8150	--	--	--	--	--	--	--	--
JUNE											
27...	62	420	2500	--	--	--	--	--	--	--	--
JULY											
15...	--	--	--	--	--	--	--	--	--	--	--
AUG.											
08...	80	720	230	--	--	--	--	--	--	--	--
26...	84	840	253	16	10	4	6	<10	<10	0	10
SEP.											
30...	90	340	850	--	--	--	--	--	--	--	--

B - Results based on colony count outside the acceptable range.

RED RIVER OF THE NORTH BASIN

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05083500 RED RIVER OF THE NORTH AT OSLO, MINN.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TOTAL MERCURY (HG) (UG/L)	SUS- PENDE D MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	SUS- PENDE D SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	SUS- PENDE D ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
OCT. 01...	.1	.1	.0	0	0	0	30	30	0
JAN. 07...	.6	.5	.1	1	1	0	40	10	30
APR. 30...	.2	.2	.0	1	1	0	90	70	20
AUG. 26...	.0	.0	.0	0	0	0	40	30	10

DATE	SUS- PENDE D CHRO- MIUM (CR) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	SUS- PENDE D COBALT (CO) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	SUS- PENDE D COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	SUS- PENDE D LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)
OCT. 01...	0	0	<50	<50	0	<10	<5	5	<100	<99	1
JAN. 07...	0	0	0	0	0	60	57	3	<100	<97	3
APR. 30...	0	0	<50	<50	0	60	54	6	<100	<98	2
AUG. 08...	--	--	--	--	--	--	--	--	--	--	--
SEP. 26...	10	0	<50	<50	0	20	16	4	<100	<97	3
30...	--	--	--	--	--	--	--	--	--	--	--

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS AND BED MATERIAL, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDE D SEDI- MENT (MG/L)	SUS- PENDE D SEDI- MENT DIS- CHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .004 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM
OCT. 01...	1300	32	138	84	8	20	24	26	67	98	100
24...	1100	40	231	73	--	--	--	--	--	--	--
NOV. 21...	1310	118	765	64	--	--	--	--	--	--	--
JAN. 07...	1130	13	35	72	--	--	--	--	--	--	--
29...	1100	37	137	64	--	--	--	--	--	--	--
FEB. 26...	1030	12	48	48	--	--	--	--	--	--	--
MAR. 19...	1030	22	90	53	--	--	--	--	--	--	--
APR. 30...	1100	176	18200	93	--	--	--	--	--	--	--
MAY 21...	1030	176	3710	95	--	--	--	--	--	--	--
JUNE 27...	1100	318	10300	97	--	--	--	--	--	--	--
JULY 15...	0940	156	18100	92	--	--	--	--	--	--	--
AUG. 08...	1000	244	2350	91	--	--	--	--	--	--	--
26...	1130	125	844	88	--	--	--	--	--	--	--
SEP. 30...	1100	75	441	92	--	--	--	--	--	--	--

RED RIVER OF THE NORTH BASIN

05083500 RED RIVER OF THE NORTH AT OSLO, MINN.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1											---	---
2											---	---
3											---	---
4											---	---
5											---	---
6											---	---
7											---	---
8											---	---
9											---	---
10											---	---
11											---	---
12											---	---
13											---	---
14											---	---
15											---	---
16											---	---
17											---	---
18											---	---
19											---	---
20											---	---
21											---	---
22											---	---
23											---	---
24											---	---
25											636	524
26											---	546
27											561	542
28											576	539
29											---	564
30											---	538
31											542	496
MONTH											---	---

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	519	512	401	382	420	407						
2	---	490	430	417	422	410						
3	---	485	461	430	439	418						
4	---	497	474	461	426	413						
5	---	493	484	473	423	411						
6	496	468	497	482	418	406						
7	---	---	503	496	414	397						
8	---	---	501	486	418	396						
9	---	---	503	490	412	376						
10	---	---	505	501	397	322						
11	---	292	509	502	479	320						
12	---	291	509	502	530	344						
13	303	295	510	503	---	---						
14	296	290	516	508	---	---						
15	307	295	520	512	---	---						
16	319	307	518	504	---	---						
17	332	321	517	499	---	---						
18	342	332	531	494	---	---						
19	364	342	514	498	---	---						
20	---	---	508	491	---	---						
21	---	---	510	496	---	---						
22	---	---	504	489	---	---						
23	---	---	489	479	---	---						
24	---	---	497	465	---	---						
25	---	---	478	461	---	---						
26	---	---	490	465	---	---						
27	---	---	484	443	---	---						
28	---	---	471	426	---	---						
29	---	---	442	424	---	---						
30	383	370	436	422	---	---						
31	---	---	438	415	---	---						
MONTH	---	---	531	382	---	---						

05083500 RED RIVER OF THE NORTH AT OSLO, MINN.--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

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

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1.0	0.0	6.5	---	19.0	17.5	---	---				
2	1.5	0.0	7.5	6.0	19.0	17.5	19.0	18.5				
3	1.5	0.5	10.0	8.0	19.0	18.0	21.0	19.5				
4	1.0	0.5	12.0	11.0	19.5	18.0	---	---				
5	1.0	0.5	---	---	19.0	18.5	---	---				
6	1.5	0.5	---	---	21.0	19.0	---	---				
7	2.0	1.0	---	---	21.5	19.5	---	---				
8	---	---	---	---	21.5	20.5	---	---				
9	---	---	17.5	17.0	23.0	20.5	---	---				
10	---	---	18.0	17.0	23.5	21.5	---	---				
11	0.5	0.0	19.0	17.5	26.5	21.5	---	---				
12	1.0	0.0	18.5	18.0	---	---	---	---				
13	1.5	0.0	18.5	17.5	---	---	---	---				
14	1.0	0.0	19.5	17.5	---	---	---	---				
15	---	---	18.5	18.0	---	---	---	---				
16	3.0	---	18.5	17.0	---	---	---	---				
17	4.0	3.0	18.0	17.0	---	---	---	---				
18	4.5	4.0	17.0	16.5	---	---	---	---				
19	5.5	5.0	17.5	16.5	---	---	---	---				
20	---	---	17.5	16.0	---	---	---	---				
21	---	---	17.5	16.5	---	---	---	---				
22	---	---	17.5	16.0	---	---	---	---				
23	---	---	17.0	16.0	---	---	---	---				
24	---	---	17.5	16.5	---	---	---	---				
25	---	---	17.5	17.0	---	---	---	---				
26	---	---	17.5	16.5	---	---	---	---				
27	---	---	17.5	16.0	---	---	---	---				
28	---	---	18.0	16.0	24.5	20.0	---	---				
29	---	---	17.5	16.0	26.5	20.0	---	---				
30	---	---	18.0	16.5	28.0	25.0	---	---				
31	---	---	18.0	17.0	---	---	---	---				
MONTH	---	---	19.5	6.0	---	---	---	---				

05083500 RED RIVER OF THE NORTH AT OSLO, MINN.--Continued

BIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

PHYTOPLANKTON

<u>DATE</u>	<u>TOTAL COUNT CELLS/ML</u>	<u>DOMINANT GENERA</u>	<u>PERCENT COMPOSITION</u>	<u>ALGAL GROUP</u>
741001	12,000	<u>Anacystis</u>	47	Blue-green
741121	41,000	<u>Anacystis</u>	68	Blue-green
750107	18,000	<u>Anacystis</u>	58	Blue-green
		<u>Agmenellum</u>	38	Blue-green
750129	1,300	<u>Lyngbya</u>	64	Blue-green
		<u>Cyclotella</u>	16	Diatom
750226	2,600	<u>Anacystis</u>	68	Blue-green
		<u>Lyngbya</u>	19	Blue-green
750319	430	<u>Lyngbya</u>	47	Blue-green
		<u>Cyclotella</u>	15	Diatom
750430	270	<u>Cyclotella</u>	31	Diatom
		<u>Melosira</u>	15	Diatom
		<u>Chlamydomonas</u>	15	Flagellate
750521	38,000	<u>Gomphosphaeria</u>	78	Blue-green
750627	1,500	<u>Melosira</u>	26	Diatom
		<u>Cyclotella</u>	19	Diatom
		<u>Asterionella</u>	15	Diatom
		<u>Scenedesmus</u>	15	Green
750808	3,800	<u>Oocystis</u>	34	Green
		<u>Scenedesmus</u>	19	Green
		<u>Cyclotella</u>	24	Diatom
750930	50,000	<u>Dictyosphaerium</u>	22	Green
		<u>Anacystis</u>	43	Blue-green

PERIPHYTON

Collected by plastic strips samplers placed in the stream approximately one month prior to collection date.

<u>DATE</u>	<u>DRY WEIGHT G/M²</u>	<u>ASH WEIGHT G/M²</u>	<u>CHLOROPHYLL A G/M²</u>	<u>CHLOROPHYLL B G/M²</u>
741001	58	25	--	--
741024	55	58	12	16
750226	0.5	0.5	0.2	0.1

05084000 FOREST RIVER NEAR FORDVILLE, N. DAK.

LOCATION.--Lat 48°11'50", long 97°43'49", on line between secs.32 and 33, T.155 N., R.55 W., Walsh County, 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 mi² (1,181 km²), of which about 120 mi² (311 km²) is probably noncontributing.

PERIOD OF RECORD.--Chemical analyses: September 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SI02) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HC03) (MG/L)
OCT. 16...	1045	13	--	--	--	--	--	--	--	--
NOV. 21...	1700	15	16	100	220	91	27	21	3.9	310
DEC. 15...	1230	11	13	80	240	92	29	23	3.7	320
FEB. 03...	1225	7.4	20	20	300	86	30	19	4.0	309
MAR. 13...	1420	9.2	20	60	260	86	28	19	3.3	306
MAR. 22...	1210	32	--	--	--	--	--	--	--	--
APR. 16...	1100	633	--	--	--	--	--	--	--	--
MAY 09...	1500	62	11	110	100	77	33	41	5.5	259
JUNE 04...	1630	17	6.8	20	240	76	29	29	4.9	274
JULY 09...	1315	70	19	0	20	60	24	33	5.0	233
AUG. 21...	1130	6.3	17	0	80	75	27	24	3.8	288
SEP. 04...	1335	5.7	15	210	70	73	29	22	3.6	282

DATE	CARBONATE (CO3) (MG/L)	ALKALINITY AS CAC03 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHOPHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (PER AC-FT)
OCT. 16...	--	--	--	--	--	--	--	--	--
NOV. 21...	0	254	120	7.0	.5	.81	.02	442	.60
DEC. 15...	0	263	120	8.9	.4	1.1	.02	486	.66
FEB. 03...	0	253	120	8.1	.2	1.4	.05	500	.68
MAR. 13...	0	251	120	6.2	.2	.56	.04	450	.61
MAR. 22...	--	--	--	--	--	--	--	--	--
APR. 16...	--	--	--	--	--	--	--	--	--
MAY 09...	0	212	170	14	.1	.81	.08	507	.69
JUNE 04...	4	231	130	11	.1	.45	--	456	.62
JULY 09...	0	191	120	9.4	.1	.84	.16	398	.54
AUG. 21...	0	236	110	7.1	.1	.56	.04	407	.55
SEP. 04...	0	231	98	7.1	.1	.56	.03	447	.61

DATE	DIS-SOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DIS-SOLVED BORON (B) (UG/L)
OCT. 16...	--	--	--	--	--	400	--	9.0	--
NOV. 21...	17.9	340	84	12	.5	700	7.6	.0	160
DEC. 15...	14.4	350	87	12	.5	725	7.6	.0	0
FEB. 03...	9.99	340	85	11	.4	710	7.5	.0	280
MAR. 13...	11.2	330	79	11	.5	600	7.8	.0	240
MAR. 22...	--	--	--	--	--	632	8.0	.0	--
APR. 16...	--	--	--	--	--	350	8.0	.0	--
MAY 09...	84.9	330	120	21	1.0	770	8.1	15.5	200
JUNE 04...	20.9	310	78	17	.7	700	8.1	19.0	0
JULY 09...	75.2	250	57	22	.9	600	7.9	22.0	40
AUG. 21...	6.92	300	62	15	.6	650	8.1	15.5	0
SEP. 04...	6.88	300	70	14	.6	640	8.4	17.0	280

RED RIVER OF THE NORTH BASIN
05085000 FOREST RIVER AT MINTO, N. DAK.

LOCATION.--Lat 48°16'10", long 97°22'10", in SE¼ sec.31, T.156 N., R.52 W., Walsh County, 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 mi² (1,920 km²), of which about 120 mi² (310 km²) is probably noncontributing.

PERIOD OF RECORD.--Chemical analyses: September 1974 to current year.
Sediment records: September 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEMIS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LITY AS CaCO ₃ (MG/L)
OCT.												
25...	1000	12	14	40	120	82	33	30	4.6	300	0	246
NOV.												
19...	1200	15	11	60	120	88	36	29	4.4	320	0	263
DEC.												
17...	1130	11	10	40	20	180	7.4	43	5.2	410	0	336
JAN.												
28...	1130	5.4	19	0	340	120	22	40	5.0	350	0	287
FEB.												
25...	1430	3.9	17	100	400	99	35	43	4.8	343	0	281
MAR.												
18...	1150	5.5	16	40	320	100	36	45	5.1	350	0	287
APR.												
11...	1810	E20	--	--	--	--	--	--	--	--	--	--
15...	1655	1420	--	--	--	--	--	--	--	--	--	--
18...	1105	878	--	--	--	--	--	--	--	--	--	--
29...	1100	344	4.9	60	80	80	34	34	6.3	216	0	177
MAY												
20...	1425	54	16	40	320	90	33	39	7.0	301	0	247
JUNE												
25...	1005	46	15	0	320	74	33	28	5.1	262	0	215
AUG.												
05...	1430	12	--	--	--	--	--	--	--	--	--	--
SEP.												
03...	1310	9.7	--	--	--	--	--	--	--	--	--	--

DATE	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHOPHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO
OCT.												
25...	120	22	.4	.23	.00	459	.62	14.9	340	95	16	.7
NOV.												
19...	140	22	.5	.56	.00	474	.64	19.2	370	110	14	.7
DEC.												
17...	170	36	.5	.56	<.01	659	.90	19.6	480	140	16	.9
JAN.												
28...	140	43	.4	1.4	.03	595	.81	8.68	390	100	18	.9
FEB.												
25...	140	44	.2	1.3	.03	570	.78	6.00	390	110	19	.9
MAR.												
18...	150	46	.4	1.5	.05	611	.83	9.07	400	110	19	1.0
APR.												
11...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
29...	170	50	.1	2.7	.13	524	.71	487	340	160	18	.8
MAY												
20...	180	24	.2	.18	.06	561	.76	81.8	360	110	19	.9
JUNE												
25...	120	22	.1	.84	.06	450	.61	55.9	320	110	16	.7
AUG.												
05...	--	--	--	--	--	--	--	--	--	--	--	--
SEP.												
03...	--	--	--	--	--	--	--	--	--	--	--	--

E - Estimated.

RED RIVER OF THE NORTH BASIN

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05085000 FOREST RIVER AT MINTO, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COL. PER 100 ML)	DISSOLVED ORGANIC CARBON (MG/L)	SUSPENDED ORGANIC CARBON (MG/L)	DISSOLVED BORON (MG/L)
OCT. 25...	739	8.0	6.0	10.4	86	--	86	185	--	--	120
NOV. 19...	739	8.1	.0	12.4	87	--	<1	250	4.0	1.7	200
DEC. 17...	1100	7.3	.0	12.0	85	--	<1	<1	5.0	--	0
JAN. 28...	900	7.3	.0	4.0	85	--	--	--	3.7	.0	240
FEB. 25...	930	7.5	.0	1.8	13	--	<1	39	17	.4	240
MAR. 18...	950	7.6	.0	--	17	--	82	810	--	--	80
APR. 11...	520	7.7	.0	--	--	--	--	--	--	--	--
15...	302	7.7	.5	--	--	--	--	--	--	--	--
18...	399	8.2	.5	--	--	--	--	--	--	--	--
29...	730	8.0	4.0	10.8	84	480	150	--	17	2.2	--
MAY 20...	833	8.2	17.5	9.0	92	--	--	80	16	--	280
JUNE 25...	610	8.0	23.0	5.6	67	--	230	460	7.6	.8	320
AUG. 05...	770	8.4	20.5	6.2	70	--	--	--	19	2.3	--
SEP. 03...	770	--	17.5	--	--	--	--	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT AND BED MATERIAL, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .004 MM
OCT. 25...	1000	53	1.7	--	--	--	--
NOV. 19...	1200	38	1.5	--	--	--	--
DEC. 17...	1130	74	2.2	--	--	--	--
JAN. 28...	1130	38	.55	--	--	--	--
FEB. 25...	1430	55	.58	--	--	--	--
MAR. 18...	1150	42	.62	--	--	--	--
APR. 29...	1100	158	147	51	78	100	31
MAY 20...	1425	60	8.7	--	--	--	--
JUNE 25...	1005	68	8.4	--	--	--	--
AUG. 05...	1430	48	1.6	--	--	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM
APR. 29...	85	91	94	96	98	99	100

B - Results based on colony count outside the acceptable range.

RED RIVER OF THE NORTH BASIN

05092000 RED RIVER OF THE NORTH AT DRAYTON, N. DAK.

LOCATION.--Lat 48°34'20", long 97°08'50", in SE4SE4SE4 sec.24, T.159 N., R.51 W., Pembina County, temperature recorder at gaging station on downstream end of east pier of interstate highway bridge, 1.5 mi (2.4 km) northeast of Drayton and at mile 206.7 (kilometre 332.6).

DRAINAGE AREA.--34,800 mi² (90,100 km²), approximately, includes 3,800 mi² (9,800 km²) in closed basins.

PERIOD OF RECORD.--Chemical analyses: June 1954 to September 1955.

Water temperatures: December 1956 to September 1961, October 1965 to September 1966, October 1967 to March 1972, August 1973 to September 1974.

EXTREMES.--Current year:

Water temperatures: Maximum, 24.5°C July 7-10, 15-21, 30, 31, Aug. 1-6; minimum, freezing point on many days during winter period.

Period of record:

Water temperatures (1956-58, 1959-61, 1965-66, 1967-72, 1974): Maximum, 29.0°C July 24-27, 1974; minimum, freezing point on many days during winter period.

REMARKS.--Miscellaneous samples of chemical data published for water years 1972-74.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	8.5	6.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	8.5	8.0	6.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	8.0	8.0	4.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	8.0	8.0	5.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	8.0	7.5	4.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	7.5	7.0	4.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	7.0	6.5	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	6.0	6.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	6.0	6.0	4.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	6.0	6.0	3.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	---	---	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	---	---	3.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	---	---	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	---	---	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	---	---	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	---	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	0.0	0.0
30	6.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0	---	---	0.0	0.0
31	6.5	6.5	---	---	0.0	0.0	0.0	0.0	---	---	0.0	0.0
MONTH	9.5	6.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	0.0	0.0	6.0	6.0	18.0	18.0	23.5	23.5	24.5	24.5	20.0	19.5
2	0.0	0.0	6.5	6.0	18.0	18.0	23.5	23.5	24.5	24.5	19.5	19.0
3	0.0	0.0	7.0	6.5	18.0	18.0	23.5	23.5	24.5	24.5	18.5	18.5
4	0.0	0.0	8.0	7.0	18.0	18.0	23.5	23.5	24.5	24.5	18.5	18.0
5	0.0	0.0	9.0	8.0	18.0	18.0	23.5	23.5	24.5	24.5	18.0	18.0
6	0.0	0.0	11.0	9.0	18.0	17.5	23.5	23.5	24.5	24.0	18.0	17.5
7	0.0	0.0	11.5	10.5	18.0	17.5	24.5	23.5	24.0	24.0	17.5	16.5
8	0.0	0.0	12.5	11.5	18.0	18.0	24.5	24.5	24.0	24.0	17.0	16.5
9	0.0	0.0	13.0	12.0	18.0	18.0	24.5	24.5	24.0	24.0	16.5	16.5
10	0.0	0.0	14.5	13.0	18.0	18.0	24.5	24.0	24.0	23.5	16.5	16.5
11	0.0	0.0	14.0	14.0	18.0	18.0	24.0	24.0	23.5	23.5	16.5	16.0
12	0.0	0.0	15.0	14.0	18.0	18.0	24.0	23.5	23.5	23.5	16.0	14.5
13	0.0	0.0	15.0	14.5	18.0	18.0	23.5	23.5	23.5	23.5	14.5	14.0
14	0.0	0.0	15.0	15.0	18.0	18.0	23.5	23.5	23.5	23.5	14.0	14.0
15	0.0	0.0	15.0	14.5	18.0	18.0	24.5	23.5	23.0	23.0	14.0	14.0
16	0.0	0.0	14.5	14.5	18.5	18.0	24.5	24.5	23.0	22.5	14.0	14.0
17	0.0	0.0	15.5	14.5	18.5	18.5	24.5	24.5	22.5	22.0	15.0	14.5
18	0.0	0.0	15.5	0.0	20.0	18.5	24.5	24.5	22.0	21.0	15.0	15.0
19	0.0	0.0	16.0	0.0	20.0	20.0	24.5	24.5	21.0	20.0	15.0	15.0
20	0.0	0.0	16.0	16.0	21.0	20.0	24.5	24.5	20.0	19.5	15.0	14.0
21	1.5	0.0	16.0	16.0	22.0	21.0	24.5	24.5	19.5	19.5	14.0	13.0
22	2.5	1.5	16.0	16.0	22.0	21.5	24.0	24.0	19.5	19.5	13.0	13.0
23	3.5	2.5	17.0	16.0	22.5	21.5	24.0	24.0	20.0	19.5	13.0	13.0
24	4.0	3.5	18.0	17.0	23.5	22.5	24.0	23.5	21.0	20.0	13.0	13.0
25	5.5	4.0	18.0	18.0	24.0	23.0	23.5	23.5	21.0	21.0	13.0	13.0
26	5.5	5.5	18.0	18.0	24.0	24.0	23.5	23.5	21.0	20.0	13.5	13.5
27	6.0	5.5	18.0	17.5	24.0	24.0	23.5	23.5	20.0	19.5	13.5	13.5
28	6.0	6.0	18.0	18.0	24.0	24.0	24.0	23.5	19.5	19.5	13.5	13.5
29	6.0	6.0	18.0	18.0	24.0	24.0	24.0	24.0	19.5	19.5	13.5	13.5
30	6.0	6.0	18.0	18.0	23.5	23.5	24.5	24.0	21.0	19.5	13.5	13.5
31	---	---	18.0	18.0	---	---	24.5	24.5	20.0	20.0	---	---
MONTH	6.0	0.0	18.0	17.5	24.0	23.5	24.5	23.5	24.5	19.5	20.0	13.0

05099600 PEMBINA RIVER AT WALHALLA, N. DAK.

LOCATION.--Lat 48°54'50", long 97°55'00", in NE¼NE¼ sec.29, T.163 N., R.56 W., Pembina County, at gaging station at bridge on State Highway 32, at south edge of Walhalla, and 7 mi (11 km) downstream from Little Pembina River.

DRAINAGE AREA.--3,350 mi² (8,680 km²), approximately.

PERIOD OF RECORD.--Chemical analyses: March 1962 to current year.

Specific conductance: October 1974 to current year. October 1972 to September 1974 (weekly). Prior to October 1972, once daily measurement.

Water temperatures: October 1974 to current year. October 1972 to September 1974 (weekly). Prior to October 1972, once daily measurement.

Sediment records: April 1962 to current year.

EXTREMES.--Current year:

Specific conductance: Maximum daily, 1,420 micromhos May 17; minimum daily, 402 micromhos Apr. 13.

Water temperatures: Maximum daily, 25.0°C July 19; minimum daily, freezing point on many days during winter period.

Sediment concentrations: Maximum daily, 2,840 mg/l Apr. 29; minimum daily, 4 mg/l Sept. 6.

Sediment discharge: Maximum daily, 7,190 tons Apr. 29; minimum daily, 0.55 tons Sept. 6.

Period of record:

Dissolved solids (1962-73): Maximum 822 mg/l Jan. 15-31, 1963; minimum, 187 mg/l Apr. 11, 1965.

Hardness (1962-73): Maximum, 543 mg/l Jan. 15-31, 1963; minimum, 95 mg/l Apr. 11, 1965.

Specific conductance (1962-72, 1975): Maximum daily, 1,290 micromhos Feb. 17, 1972; minimum daily, 223 micromhos Apr. 9, 1971.

Water temperatures (1962-72, 1975): Maximum daily, 31.0°C July 24, 1963; minimum daily, freezing point on many days during winter periods.

Sediment concentrations: Maximum daily, 21,400 mg/l Aug. 9, 1973; minimum daily, 3 mg/l Feb. 23, 1965.

Sediment discharge: Maximum daily, 169,000 tons Apr. 11, 1971; minimum daily, less than 0.50 ton on many days.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SI02) (MG/L)	DIS-SOLVED ALUMINUM (AL) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)
OCT. 10...	1100	58	20	--	--	--	87	40	53	9.3	325	--
NOV. 19...	0730	38	19	--	--	--	99	40	57	8.9	372	--
DEC. 17...	1230	16	18	--	--	--	110	43	59	8.8	423	--
FEB. 06...	1110	5.5	22	--	--	--	110	39	43	7.4	378	--
MAR. 17...	1730	9.1	20	--	--	--	100	39	42	7.2	372	0
APR. 12...	1515	360	--	--	--	--	--	--	--	--	--	--
14...	1305	E350	11	100	80	90	34	12	25	5.7	123	0
17...	1305	610	--	--	--	--	--	--	--	--	--	--
22...	1330	504	--	--	--	--	--	--	--	--	--	--
MAY 08...	1440	1020	19	--	--	--	62	27	41	7.0	193	0
16...	1305	1430	--	--	--	--	--	--	--	--	--	--
JUNE 05...	1410	766	18	--	--	--	67	38	45	9.2	234	0
JULY 10...	1640	241	29	--	--	--	73	36	50	9.3	256	0
AUG. 19...	1805	69	--	--	--	--	79	43	51	9.4	278	9
SEP. 10...	1415	45	20	0	20	80	81	38	52	10	282	--

DATE	ALKALINITY AS CaCO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)
OCT. 10...	267	200	11	.2	.01	.13	590	.80	93.4	380	120
NOV. 19...	305	210	14	.2	.01	.09	677	.92	69.5	410	110
DEC. 17...	347	230	15	.3	.05	.06	708	.96	30.6	450	100
FEB. 06...	310	180	13	.3	.31	.07	624	.85	9.27	440	130
MAR. 17...	305	160	11	.3	.31	.05	591	.80	14.5	410	110
APR. 12...	--	--	--	--	--	--	--	--	--	--	--
14...	101	87	6.0	.1	2.0	.34	264	.36	249	130	34
17...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	158	180	10	.2	.40	.09	470	.64	1290	270	110
16...	--	--	--	--	--	--	--	--	--	--	--
JUNE 05...	192	220	10	.2	.07	.12	542	.74	1120	320	130
JULY 10...	210	210	10	.3	.10	.15	577	.78	375	330	120
AUG. 19...	243	230	11	--	--	.14	--	--	--	370	130
SEP. 10...	231	220	10	.2	.02	.16	583	.79	70.8	360	130

E - Estimated.

RED RIVER OF THE NORTH BASIN

05099600 PEMBINA RIVER AT WALHALLA, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	PERCENT SODIUM	SODIUM AN- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)
OCT. 10...	23	1.2	875	8.1	9.5	5	--	--	50	--	--
NOV. 19...	23	1.2	1000	7.9	.0	5	--	--	140	--	--
DEC. 17...	22	1.2	1090	7.7	.0	10	--	--	140	--	--
FEB. 06...	17	.9	990	7.3	.0	10	--	--	110	--	--
MAR. 17...	18	.9	900	7.5	.0	5	--	--	100	--	--
APR. 12...	--	--	388	8.1	.5	--	--	--	--	--	--
14...	28	.9	373	8.1	.0	70	3	<100	80	1	0
17...	--	--	462	8.2	.5	--	--	--	--	--	--
22...	--	--	518	8.4	1.0	--	--	--	--	--	--
MAY 09...	25	1.1	600	8.0	13.5	30	--	--	110	--	--
14...	--	--	630	8.0	16.0	--	--	--	--	--	--
JUNE 05...	23	1.1	750	7.9	15.5	15	--	--	80	--	--
JULY 10...	24	1.2	812	8.5	23.5	30	--	--	140	--	--
AUG. 19...	22	1.1	860	8.5	15.5	35	--	--	140	--	--
SEP. 10...	23	1.2	820	--	18.0	4	3	<200	150	0	10

DATE	DIS- SOLVED COBALT (CO) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
APR. 12...	--	--	--	--	--	--	--	--	--	--	--
14...	0	7	4	30	.0	2	7	2	160	3.0	30
SEP. 10...	0	3	3	60	.0	2	6	0	410	2.3	10

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT AND BED MATERIAL

DATE	TIME	SUS- PENDED SEDIM- ENT (MG/L)	SUS- PENDED SEDIM- ENT DIS- CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
APR. 17...	1305	565	931	63	66	82	87	95	99	100
25...	1340	1020	--	64	88	95	97	98	100	--
JUNE 05...	1410	440	910	64	87	95	96	100	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM	BED MAT. FALL DIAM. % FINER THAN 4.00 MM	BED MAT. FALL DIAM. % FINER THAN 8.00 MM	BED MAT. FALL DIAM. % FINER THAN 16.0 MM	BED MAT. FALL DIAM. % FINER THAN 32.0 MM
APR. 17...	2	3	33	76	86	91	94	96	97	100
25...	0	1	2	19	30	43	57	74	84	100
JUNE 05...	2	3	10	18	20	26	44	73	93	100

05099600 PEMBINA RIVER AT WALHALLA, N. DAK.--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	64	66	11	41	77	8.5	27	60	4.4
2	63	64	11	41	77	8.5	27	60	4.4
3	57	60	9.2	40	77	8.3	26	60	4.2
4	58	58	9.1	38	77	7.9	24	60	3.9
5	58	56	8.8	39	77	8.1	23	60	3.7
6	60	115	19	38	77	7.9	22	60	3.6
7	62	202	34	38	77	7.9	22	98	5.8
8	60	189	31	38	77	7.9	21	111	6.3
9	59	186	30	38	77	7.9	21	110	6.2
10	59	186	30	38	77	7.9	20	110	5.9
11	59	186	30	37	77	7.7	19	110	5.6
12	59	173	28	32	77	6.7	18	110	5.3
13	57	149	23	26	77	5.8	18	110	5.3
14	57	144	22	26	77	5.4	18	110	5.3
15	57	134	21	26	77	5.4	17	110	5.0
16	56	132	20	27	82	6.0	17	110	5.0
17	56	126	19	35	90	8.5	16	105	4.5
18	54	120	17	37	80	8.0	16	105	4.5
19	54	117	17	38	62	6.4	16	105	4.5
20	53	106	15	37	63	6.3	16	105	4.5
21	52	90	13	36	70	6.8	15	100	4.1
22	52	78	11	35	70	6.6	15	100	4.1
23	50	77	10	34	70	6.4	15	100	4.1
24	50	77	10	33	70	6.2	15	100	4.1
25	49	77	10	32	66	5.7	15	100	4.1
26	44	77	9.1	31	60	5.0	15	100	4.1
27	42	77	8.7	30	60	4.9	15	100	4.1
28	42	77	8.7	29	60	4.7	15	100	4.1
29	42	77	8.7	29	60	4.7	15	100	4.1
30	42	77	8.7	28	60	4.5	16	110	4.8
31	41	77	8.5	---	---	---	16	110	4.8
MONTH	1668	---	511.5	1029	---	202.5	571	---	144.4

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	15	100	4.1	7.3	80	1.6	5.0	70	.95
2	14	98	3.7	7.0	80	1.5	5.0	70	.95
3	14	98	3.7	6.7	80	1.4	5.0	70	.95
4	13	95	3.3	6.4	77	1.3	5.0	70	.95
5	12	95	3.1	6.0	75	1.2	5.0	70	.95
6	11	90	2.7	5.5	70	1.0	5.0	70	.95
7	11	90	2.7	5.5	70	1.0	5.0	70	.95
8	11	90	2.7	5.5	70	1.0	4.9	70	.93
9	11	90	2.7	5.5	70	1.0	4.9	70	.93
10	10	90	2.4	5.5	70	1.0	4.8	70	.91
11	10	90	2.4	5.3	70	1.0	4.7	70	.89
12	10	90	2.4	5.2	70	.98	4.6	70	.87
13	9.5	85	2.2	5.2	70	.98	4.6	70	.87
14	9.5	85	2.2	5.2	70	.98	4.6	70	.87
15	9.0	85	2.1	5.2	70	.98	5.0	100	1.4
16	9.0	85	2.1	5.1	70	.96	7.0	120	2.3
17	8.9	85	2.0	5.1	70	.96	9.1	130	3.2
18	8.8	85	2.0	5.1	70	.96	9.5	150	3.8
19	8.7	85	2.0	5.1	70	.96	10	200	5.4
20	8.6	85	2.0	5.0	70	.95	10	200	5.4
21	8.5	80	1.8	5.0	70	.95	9.9	180	4.8
22	8.4	80	1.8	5.0	70	.95	9.9	180	4.8
23	8.4	80	1.8	5.0	70	.95	9.8	150	4.0
24	8.3	80	1.8	5.0	70	.95	9.8	150	4.0
25	8.2	80	1.8	5.0	70	.95	9.8	150	4.0
26	8.1	80	1.8	5.0	70	.95	9.7	130	3.4
27	8.0	80	1.7	5.0	70	.95	9.7	130	3.4
28	7.9	80	1.7	5.0	70	.95	9.7	130	3.4
29	7.8	80	1.7	---	---	---	9.6	120	3.1
30	7.6	80	1.6	---	---	---	9.6	120	3.1
31	7.5	80	1.6	---	---	---	9.5	100	2.5
MONTH	302.7	---	71.6	152.4	---	29.31	225.7	---	75.02

RED RIVER OF THE NORTH BASIN

05099600 PEMBINA RIVER AT WALHALLA, N. DAK.--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

APRIL					MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	
1	9.5	100	2.6	1020	1350	3720	890	530	1270	
2	9.5	100	2.6	1010	1450	3950	863	525	1220	
3	9.5	100	2.6	989	1290	3440	840	460	1040	
4	10	150	4.1	980	1070	2830	768	480	995	
5	11	150	4.5	958	1050	2720	755	460	938	
6	13	150	5.3	962	1040	2700	715	430	830	
7	15	160	6.5	984	1020	2710	695	430	807	
8	17	170	7.8	1020	1080	2970	683	450	830	
9	19	180	9.2	1060	1390	3980	661	380	678	
10	25	200	13	1150	1610	5000	668	440	794	
11	40	250	27	1280	1600	5530	650	370	649	
12	345	390	363	1350	1630	5940	630	370	629	
13	340	400	367	1410	1520	5790	612	390	634	
14	335	508	459	1440	1370	5330	580	350	548	
15	403	486	529	1440	1240	4820	563	320	486	
16	584	476	751	1440	1130	4390	532	300	431	
17	622	575	966	1440	1200	4670	518	300	420	
18	535	380	549	1390	1150	4320	493	250	333	
19	507	338	463	1350	1060	3860	490	275	364	
20	418	390	440	1300	998	3500	462	170	212	
21	504	878	1190	1290	1020	3550	517	360	493	
22	539	850	1240	1250	870	2940	563	720	1090	
23	560	970	1470	1220	800	2640	490	370	490	
24	566	1160	1770	1210	770	2520	449	300	364	
25	542	1100	1610	1140	760	2340	424	220	252	
26	560	888	1340	1150	875	2720	406	150	164	
27	580	830	1300	1100	770	2290	356	180	173	
28	723	1260	2460	1080	670	1950	358	160	155	
29	926	2840	7100	1020	635	1750	430	320	372	
30	953	1630	4190	966	580	1510	521	1170	1650	
31	---	---	---	935	620	1570	---	---	---	
MONTH	10720.5	---	28642.2	36334	---	107950	17562	---	19311	

JULY					AUGUST			SEPTEMBER	
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	436	1060	1250	160	34	15	56	18	2.7
2	400	435	470	157	34	14	52	17	2.4
3	385	290	301	154	29	12	51	17	2.3
4	379	210	215	148	18	7.2	51	16	2.2
5	330	170	151	142	14	5.4	51	12	1.7
6	305	150	124	136	32	12	51	4	.55
7	282	150	114	130	50	18	51	6	.83
8	265	145	104	126	65	22	50	10	1.4
9	257	142	99	115	67	21	47	18	2.3
10	246	122	81	102	72	20	46	20	2.5
11	237	105	67	97	68	18	44	20	2.4
12	232	101	63	95	56	14	44	20	2.4
13	232	100	63	92	50	12	43	24	2.8
14	230	100	62	90	43	10	41	30	3.3
15	226	150	92	86	36	8.4	40	40	4.3
16	222	149	89	80	34	7.3	39	40	4.2
17	216	94	55	75	27	5.5	39	40	4.2
18	212	82	47	72	22	4.3	40	40	4.3
19	208	80	45	70	18	3.4	40	40	4.3
20	202	80	44	69	18	3.4	41	40	4.4
21	200	80	43	68	18	3.3	40	40	4.3
22	190	78	40	67	18	3.3	39	38	4.0
23	194	70	37	62	14	2.3	39	36	3.8
24	188	69	35	59	25	4.0	43	36	4.2
25	183	96	47	57	43	6.6	43	34	3.9
26	182	83	41	56	47	7.1	42	32	3.6
27	175	63	30	55	45	6.7	41	32	3.5
28	169	38	17	53	40	5.7	41	30	3.3
29	168	38	17	51	27	3.7	39	28	2.9
30	163	36	16	55	22	3.3	39	28	2.9
31	160	36	16	56	20	3.0	---	---	---
MONTH	7474	---	3875	2835	---	281.9	1323	---	91.88

YEAR	80197.3		161186.3						
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05099600 PEMBINA RIVER AT WALHALLA, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---				---	995	765	838	---	---
2			---				---	980	788	---	---	---
3			---				---	970	790	757	837	---
4			---				---	945	785	---	---	---
5			---				---	920	785	---	845	---
6			---				---	930	790	---	---	850
7			1060				---	955	780	788	837	---
8			---				---	1020	810	---	---	---
9			---				---	1060	768	800	---	---
10			---				---	1140	770	---	860	866
11			---				---	1260	780	821	---	---
12			---				427	1320	795	---	---	---
13			---				460	1370	792	826	---	---
14			---				402	1400	801	---	---	730
15			---				452	1400	790	837	---	---
16			---				462	1410	795	---	---	---
17			1090				512	1420	811	833	874	---
18			---				497	1370	---	---	---	---
19			---				539	1340	---	846	---	860
20			---				571	1290	---	---	---	---
21			---				570	1280	845	854	853	---
22			---				565	1250	746	---	---	---
23			---				591	1220	---	818	896	---
24			---				610	1220	---	---	---	---
25			---				633	1160	805	835	---	---
26			---				767	1160	---	---	---	---
27			---				837	1130	800	840	---	---
28			---				825	1100	---	---	---	---
29			---				750	1040	---	860	841	---
30			---				788	985	790	---	---	790
31			---				---	950	---	857	---	---
MONTH			---				---	1160	---	---	---	---

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---				---	3.0	17.0	20.0	---	---
2			---				---	4.0	16.0	---	---	---
3			---				---	7.0	14.0	20.0	22.0	---
4			---				---	7.0	15.0	---	---	---
5			---				---	7.0	14.0	---	20.0	---
6			---				---	8.0	15.0	---	---	18.0
7			0.0				---	11.0	15.0	23.0	20.0	---
8			---				---	11.0	17.0	---	---	---
9			---				---	12.0	14.0	19.0	---	---
10			---				---	15.0	14.0	---	25.0	13.0
11			---				---	14.0	14.0	17.0	---	---
12			---				2.0	12.0	16.0	---	---	---
13			---				0.0	15.0	20.0	24.0	---	---
14			---				0.0	12.0	17.0	---	---	18.0
15			---				0.0	12.0	16.0	23.0	---	---
16			---				0.0	14.0	16.0	---	---	---
17			0.0				0.0	17.0	18.0	24.0	10.0	---
18			---				0.0	18.0	---	---	---	---
19			---				0.0	17.0	---	25.0	---	15.5
20			---				3.0	16.0	---	---	---	---
21			---				1.0	12.0	20.0	20.0	16.0	---
22			---				1.0	12.0	17.0	---	---	---
23			---				2.0	15.0	---	21.0	25.0	---
24			---				1.0	17.0	---	---	---	---
25			---				3.0	17.0	19.0	18.0	---	---
26			---				6.0	15.0	---	---	---	---
27			---				5.0	16.0	19.0	20.0	---	---
28			---				5.0	16.0	---	---	---	---
29			---				3.0	16.0	---	23.0	17.0	---
30			---				3.0	16.0	19.0	---	---	9.0
31			---				---	15.0	---	23.0	---	---
MONTH			---				---	13.0	---	---	---	---

RED RIVER OF THE NORTH BASIN

05101000 TONGUE RIVER AT AKRA, N. DAK.

LOCATION.--Lat 48°46'42", long 97°44'43", in SW¼ sec.10, T.161 N., R.55 W., Pembina County, 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. Prior to Dec. 19, 1973, at site 2.7 mi (4.3 km) downstream.

DRAINAGE AREA.--160 mi² (414 km²).

PERIOD OF RECORD.--Chemical analyses: September 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MANGANESE (MN) (UG/L)	DIS- SOLVED CALCIUM (CA) (MG/L)	DIS- SOLVED MAGNESIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO ₃) (MG/L)
OCT.										
09...	1545	11	--	--	--	--	--	--	--	--
NOV.										
18...	1700	16	11	110	20	77	19	27	5.8	280
DEC.										
18...	0930	6.8	9.5	110	560	85	24	30	6.1	320
FEB.										
06...	1720	4.7	18	80	2000	92	27	28	6.0	369
MAR.										
18...	1300	3.5	16	40	2200	98	23	29	6.0	377
APR.										
12...	1145	22	--	--	--	--	--	--	--	--
22...	1550	67	--	--	--	--	--	--	--	--
MAY										
08...	1605	50	12	80	730	64	20	24	5.2	197
15...	1340	20	--	--	--	--	--	--	--	--
JUNE										
06...	0900	3.4	8.2	20	140	47	18	29	5.0	155
JULY										
10...	1910	2.4	12	0	460	56	20	26	4.9	199
AUG.										
20...	0925	3.3	5.0	60	640	61	21	27	6.3	222
SEP.										
05...	1445	3.2	2.3	100	560	60	22	27	5.7	225

DATE	CARBONATE (CO ₃) (MG/L)	ALKALINITY AS CaCO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLORIDE (CL) (MG/L)	DIS- SOLVED FLUORIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHOPHOSPHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT.									
09...	--	--	--	--	--	--	--	--	--
NOV.									
18...	0	230	90	7.2	.6	.23	.08	376	.51
DEC.									
18...	0	263	87	11	.5	.23	.06	425	.58
FEB.									
06...	0	303	95	9.4	.4	.23	.05	503	.68
MAR.									
18...	0	309	87	14	.5	.27	.05	482	.66
APR.									
12...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
MAY									
08...	0	162	100	11	.2	2.3	.09	360	.49
15...	--	--	--	--	--	--	--	--	--
JUNE									
06...	0	127	110	13	.1	.56	--	321	.44
JULY									
10...	0	163	95	11	.2	.56	.12	353	.48
AUG.									
20...	0	182	95	11	.1	.56	.08	359	.49
SEP.									
05...	0	185	100	11	.2	.81	.06	389	.53

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CARBONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPECIFIC CONDUCTANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
OCT.									
09...	--	--	--	--	--	650	--	6.5	--
NOV.									
18...	16.2	270	41	17	.7	610	8.2	1.0	0
DEC.									
18...	7.80	310	49	17	.7	610	7.8	3.0	0
FEB.									
06...	6.38	340	38	15	.7	745	7.5	3.0	350
MAR.									
18...	4.56	340	30	15	.7	750	7.6	4.0	80
APR.									
12...	--	--	--	--	--	660	7.8	1.0	--
22...	--	--	--	--	--	325	7.7	1.5	--
MAY									
08...	48.6	240	81	17	.7	536	8.1	13.0	200
15...	--	--	--	--	--	--	--	15.5	--
JUNE									
06...	2.95	190	64	24	.9	520	8.2	14.5	0
JULY									
10...	2.29	220	59	20	.8	500	7.9	24.0	120
AUG.									
20...	3.20	240	57	19	.8	580	8.1	18.0	0
SEP.									
05...	3.36	240	56	19	.8	575	8.3	17.0	80

05113600 LONG CREEK NEAR NOONAN, N. DAK.
(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, 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 mi² (4,640 km²), approximately, of which about 1,160 mi² (3,000 km²) is probably non-contributing.

PERIOD OF RECORD.--Chemical analyses: September 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED TAS- SIUM (K) (MG/L)	RICAR- BONATE (HCO ₃) (MG/L)
OCT.										
01...	1120	.60	--	--	--	--	--	--	--	--
NOV.										
05...	1150	1.1	2.6	20	40	64	46	97	8.4	380
DEC.										
05...	1115	.68	2.1	130	100	120	39	110	10	460
JAN.										
07...	1210	.78	3.0	170	420	89	63	100	10	480
FEB.										
04...	1350	.52	10	60	880	140	49	110	10	530
MAR.										
12...	1140	.79	9.5	130	400	91	66	89	9.1	450
APR.										
15...	1130	34	2.9	210	400	62	40	71	9.6	263
JUNE										
03...	1230	31	6.8	60	40	84	49	140	11	345
JULY										
01...	1215	16	7.6	20	40	83	61	240	9.7	461
AUG.										
05...	1445	.40	6.0	290	40	70	64	260	13	493
SEP.										
03...	1520	7.1	4.5	290	10	43	52	180	11	322

DATE	CAR- BONATE (CO ₃) (MG/L)	ALKA- LITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT.									
01...	--	--	--	--	--	--	--	--	--
NOV.									
05...	0	312	250	9.5	.4	.56	.04	660	.90
DEC.									
05...	0	377	300	11	.4	.56	.06	832	1.13
JAN.									
07...	0	394	300	11	.5	1.1	.06	854	1.16
FEB.									
04...	0	435	320	14	.5	1.8	.05	940	1.28
MAR.									
12...	0	369	290	11	.4	.50	.05	811	1.10
APR.									
15...	0	216	250	14	.1	1.4	.17	591	.80
JUNE									
03...	0	283	420	18	.1	.34	--	959	1.30
JULY									
01...	0	378	560	25	.2	1.1	.29	1270	1.73
AUG.									
05...	0	404	580	25	.1	1.5	.27	1320	1.80
SEP.									
03...	0	264	400	18	.1	1.8	.24	920	1.25

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
OCT.									
01...	--	--	--	--	--	1080	--	5.5	--
NOV.									
05...	1.96	350	37	37	2.3	1080	8.1	5.0	200
DEC.									
05...	1.53	460	83	34	2.2	1410	8.0	2.5	40
JAN.									
07...	1.80	480	88	31	2.0	1250	7.5	.5	0
FEB.									
04...	1.32	550	120	30	2.0	1340	7.7	.0	200
MAR.									
12...	1.73	500	130	28	1.7	1200	7.6	.0	280
APR.									
15...	54.3	320	100	32	1.7	897	8.0	.5	0
JUNE									
03...	80.3	410	130	42	3.0	1330	8.3	16.5	0
JULY									
01...	54.9	460	80	53	4.9	1900	8.5	22.0	360
AUG.									
05...	1.43	440	34	55	5.4	1860	8.5	21.0	0
SEP.									
03...	17.6	320	57	54	4.4	1310	8.4	16.0	280

RED RIVER OF THE NORTH BASIN

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, N. DAK.
(International gaging station)

LOCATION.--Lat 48°59'24", long 101°57'28", in NW¼SE¼NE¼ sec.33, T.164 N., R.87 W., Renville County, on right bank 0.8 mi (1.3 km) downstream from international boundary and 16 mi (26 km) northwest of Sherwood and at mile 511.4 (kilometre 822.8).

DRAINAGE AREA.--8,940 mi² (23,150 km²), approximately, of which about 5,900 mi² (15,300 km²) is probably noncontributing.

PERIOD OF RECORD.--Chemical analyses: October 1973 to current year.

Specific conductance: October 1971 to September 1973 (partial-record station).

Sediment records: October 1974 to current year.

EXTREMES.--Current year:

Sediment concentrations: Maximum daily, 306 mg/l May 22; minimum daily, 10 mg/l Oct. 1-12, Aug. 3.

Sediment discharge: Maximum daily, 1,710 tons May 5; minimum daily, 0.13 tons Oct. 1.

REMARKS.--Some chemical data furnished by North Dakota State Water Commission.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)
OCT.												
01...	1230	3.0	--	--	--	--	--	--	--	--	--	--
16...	1330	8.6	8.7	60	160	91	40	83	6.5	420	0	345
19...	1640	9.8	--	--	--	--	--	--	--	--	--	--
30...	0930	E7.0	--	--	--	--	--	--	--	--	--	--
NOV.												
19...	1400	10	7.2	80	140	130	35	140	7.7	508	0	417
DEC.												
03...	1530	5.7	--	--	--	--	--	--	--	--	--	--
17...	1600	6.2	4.0	100	220	110	55	150	9.1	540	0	443
JAN.												
07...	1430	6.0	--	--	--	--	--	--	--	--	--	--
21...	1130	5.1	11	0	640	120	46	150	8.1	543	0	445
FEB.												
04...	1500	5.4	--	--	--	--	--	--	--	--	--	--
20...	1030	4.9	12	80	1600	140	58	230	11	725	0	595
MAR.												
05...	1215	E5.5	--	--	--	--	--	--	--	--	--	--
20...	1730	7.0	9.7	100	1600	120	54	230	11	683	0	560
APR.												
18...	1600	1000	2.2	250	110	33	16	66	9.8	150	0	123
23...	1355	2920	--	--	--	--	--	--	--	--	--	--
MAY												
01...	1630	5600	--	--	--	--	--	--	--	--	--	--
06...	1815	6680	--	--	--	--	--	--	--	--	--	--
15...	1100	4280	4.2	230	10	30	16	31	8.8	140	0	115
28...	1205	1500	--	--	--	--	--	--	--	--	--	--
JUNE												
13...	1045	1200	11	80	40	56	39	54	9.2	260	0	213
24...	1430	E500	--	--	--	--	--	--	--	--	--	--
JULY												
08...	1415	160	--	--	--	--	--	--	--	--	--	--
23...	1530	80	10	40	80	82	45	120	8.6	435	0	357
AUG.												
05...	1515	E40	--	--	--	--	--	--	--	--	--	--
21...	1000	34	9.8	0	260	91	42	120	6.9	448	0	367
SEP.												
03...	1530	E200	--	--	--	--	--	--	--	--	--	--
17...	1230	38	7.7	80	140	83	35	110	9.2	400	0	328

E - Estimated.

US114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS-SOLVED SULFATE (SO ₄) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL ORGANIC NITROGEN (N) (MG/L)	TOTAL KJEL- DAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)
OCT.											
01...	--	--	--	--	.11	--	.07	.79	.86	.97	.19
16...	150	56	.4	.23	.08	.08	.07	.93	1.0	1.1	.09
19...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	.00	--	.10	.28	.38	.38	.07
NOV.											
19...	230	110	.6	.45	.01	--	.07	.79	.86	.87	.06
DEC.											
03...	--	--	--	--	.00	--	.11	.83	.94	.94	.07
17...	270	82	.4	.56	.28	--	.13	.75	.88	1.2	.06
JAN.											
07...	--	--	--	--	.38	--	.29	.59	.88	1.3	.06
21...	270	85	.4	1.2	.45	--	.76	.44	1.2	1.7	.10
FEB.											
04...	--	--	--	--	.49	--	.63	.67	1.3	1.8	.07
20...	370	91	.3	1.7	.35	--	1.0	1.0	2.0	2.4	.06
MAR.											
05...	--	--	--	--	.58	--	.62	.88	1.5	2.1	.06
20...	360	83	.3	1.6	2.1	--	.63	1.2	1.8	3.9	.12
APR.											
18...	170	10	.1	.81	.73	--	.12	1.5	1.6	2.3	.29
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	--	--	--	--	.72	--	.11	1.4	1.5	2.2	.11
06...	--	--	--	--	--	--	--	--	--	--	--
15...	84	7.5	.1	.41	.35	--	.06	.78	.84	1.2	.25
28...	--	--	--	--	.26	--	.05	1.9	1.9	2.2	.34
JUNE											
13...	200	15	.1	.23	.13	--	.04	1.8	1.8	1.9	.18
24...	--	--	--	--	.19	--	.01	1.6	1.6	1.8	.17
JULY											
08...	--	--	--	--	.03	--	.02	1.6	1.6	1.6	.12
23...	250	47	.2	.61	.05	--	.03	.93	.96	1.0	.21
AUG.											
05...	--	--	--	--	.00	--	.03	1.5	1.5	1.5	.19
21...	220	58	.2	.68	.24	--	.03	1.1	1.1	1.3	.10
SEP.											
03...	--	--	--	--	.02	--	.00	1.3	1.3	1.3	.13
17...	220	41	.1	.75	.14	--	.00	1.9	1.9	2.0	.16

DATE	DIS-SOLVED ORTHOPHOSPHORUS (P) (MG/L)	DIS-SOLVED ORTHOPHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON-CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.											
01...	--	--	619	.84	5.01	--	--	--	--	1030	8.0
16...	.04	.01	663	.90	15.4	390	47	31	1.8	1050	7.8
19...	--	--	--	--	--	--	--	--	--	1470	--
30...	--	--	694	.94	--	--	--	--	--	1150	8.0
NOV.											
19...	--	.25	907	1.23	24.5	470	52	39	2.8	1420	8.2
DEC.											
03...	--	--	909	1.24	14.0	--	--	--	--	1400	7.9
17...	--	.03	979	1.33	16.4	500	58	39	2.9	1480	7.8
JAN.											
07...	--	--	996	1.35	16.1	--	--	--	--	1400	7.5
21...	--	.04	1000	1.36	13.8	490	44	40	3.0	1510	7.4
FEB.											
04...	--	--	1040	1.41	15.2	--	--	--	--	1410	7.5
20...	--	.04	1290	1.76	17.1	590	0	45	4.1	1870	7.6
MAR.											
05...	--	--	1350	1.84	20.0	--	--	--	--	1990	7.7
20...	--	.07	1250	1.70	23.6	520	0	48	4.4	1870	7.9
APR.											
18...	--	.10	405	.55	1090	150	25	47	2.4	610	7.8
23...	--	--	--	--	--	--	--	--	--	425	--
MAY											
01...	--	--	310	.42	4690	--	--	--	--	480	7.8
06...	--	--	--	--	--	--	--	--	--	480	--
15...	--	.08	271	.37	3130	140	26	31	1.1	420	7.8
28...	--	--	336	.46	1360	--	--	--	--	500	7.8
JUNE											
13...	--	--	525	.71	1700	300	87	27	1.4	800	7.7
24...	--	--	697	.95	941	--	--	--	--	1010	8.1
JULY											
08...	--	--	752	1.02	325	--	--	--	--	1130	8.2
23...	--	.12	793	1.08	171	390	33	39	2.6	1220	8.2
AUG.											
05...	--	--	819	1.11	88.5	--	--	--	--	1160	8.1
21...	--	.08	798	1.09	73.3	400	33	39	2.6	1240	8.1
SEP.											
03...	--	--	746	1.01	--	--	--	--	--	1080	8.3
17...	--	.08	745	1.01	76.4	350	23	40	2.6	1100	8.1

RED RIVER OF THE NORTH BASIN

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	CHEM- ICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	TOTAL ORGANIC CARBON (C) (MG/L)	SUS- PENDE D ORGANIC CARBON (C) (MG/L)	DIS- SOLVED BORON (B) (UG/L)
OCT.											
01...	4.5	--	1	6.9	56	44	400	88	11	--	--
16...	8.0	10	5	9.6	86	20	8100	812	13	--	160
19...	.0	--	--	--	--	--	--	--	--	--	--
30...	5.0	--	7	9.1	75	21	E1	29	8.9	--	--
NOV.											
19...	.0	--	4	13.7	99	22	<1	81	18	--	120
DEC.											
03...	.0	--	4	10.7	94	37	B5	82	11	--	--
17...	.0	--	3	8.9	65	33	<1	813	--	--	40
JAN.											
07...	.0	--	4	3.5	25	31	--	86	11	--	--
21...	.0	--	3	2.3	17	19	810	810	9.0	--	310
FEB.											
04...	.0	--	4	1.8	13	26	82	1	16	--	--
20...	.0	--	3	1.0	7	29	220	814	12	--	470
MAR.											
05...	.0	--	3	1.8	40	32	--	--	15	--	--
20...	.0	--	6	1.8	13	32	818	825	30	--	350
APR.											
18...	.0	--	25	9.8	71	73	8790	--	24	2.4	470
23...	1.0	--	--	--	--	--	--	--	--	--	--
MAY											
01...	5.5	--	30	--	77	41	1600	881	12	--	--
06...	11.5	--	--	--	--	--	--	--	--	--	--
15...	14.0	--	50	7.3	74	39	867	88	17	--	200
28...	13.5	--	95	7.6	77	46	840	829	20	--	--
JUNE											
13...	17.5	--	30	7.2	80	52	420	80	18	--	280
24...	21.0	--	20	6.7	79	53	8290	45	16	--	--
JULY											
08...	24.0	--	20	6.6	82	49	8290	76	19	--	--
23...	23.0	--	15	7.4	90	44	880	85	17	--	680
AUG.											
05...	20.0	--	15	8.2	97	36	3400	85	21	--	--
21...	14.0	--	20	7.8	80	32	560	190	12	--	440
SEP.											
03...	14.0	--	15	8.4	90	21	2300	8608	19	--	--
17...	14.5	--	15	8.0	82	35	822800	7400	13	--	200

SUSPENDED SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDE D SEDI- MENT (MG/L)	SUS- PENDE D SEDI- MENT DIS- CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM
MAY						
01...	1630	76	1150	70	90	100
28...	1205	179	725	84	95	100

E - Estimated.

B - Results based on colony count outside the acceptable range.

RED RIVER OF THE NORTH BASIN

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05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	480	611	1080	1150	---
2	---	---	---	---	1480	1520	---	---	631	1080	1160	---
3	---	---	1400	---	---	---	---	---	650	1100	1180	1120
4	---	---	---	1420	1440	---	---	---	650	1100	1210	779
5	---	---	---	---	---	---	---	---	666	1060	1210	661
6	---	---	---	---	---	---	2500	---	695	1080	1230	656
7	---	---	---	1400	---	---	---	---	703	1120	1230	657
8	---	---	---	---	---	---	---	---	730	1130	1100	721
9	---	---	---	---	1310	1950	---	---	750	1160	1020	833
10	---	---	1410	---	---	---	---	---	734	1180	1260	864
11	---	---	---	---	---	---	---	---	715	1140	1230	911
12	---	---	---	---	---	---	---	---	765	1120	1180	965
13	---	---	---	---	---	---	1900	---	800	1100	1020	1000
14	---	---	1430	---	---	---	---	---	862	1180	1140	984
15	---	---	---	---	---	---	750	---	990	1180	1150	1000
16	1080	1300	---	---	1350	---	670	---	930	1160	1040	1020
17	---	---	1480	---	---	1550	1140	---	920	1140	1060	1030
18	---	---	---	---	---	---	668	---	954	1090	993	991
19	---	1510	---	---	---	---	472	418	940	1020	1050	940
20	---	---	---	---	1870	1870	420	415	927	1070	1100	956
21	---	---	1520	1080	---	---	410	422	935	1140	1150	977
22	---	---	---	---	---	---	448	431	953	1200	1100	1030
23	---	1350	---	---	1570	1600	440	440	980	1160	1240	1160
24	---	---	---	---	---	---	580	450	1010	1050	1240	888
25	---	---	---	---	---	---	610	475	1020	1130	1210	1010
26	---	---	---	1080	---	---	595	484	990	1150	1230	1030
27	---	---	---	---	---	---	550	499	1020	1180	1100	1020
28	---	---	1460	---	---	2320	510	510	1060	1220	1080	1030
29	---	---	---	---	---	---	---	550	1120	1070	1260	1050
30	---	1280	---	---	---	---	464	570	1100	950	1120	1080
31	---	---	---	---	---	---	---	590	---	930	---	---
MONTH	---	---	---	---	---	---	---	---	860	1110	1150	942

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	5.5	15.0	23.0	21.0	---
2	---	---	---	---	0.0	1.0	---	---	16.0	23.0	22.5	---
3	---	---	0.0	---	---	---	---	---	15.5	23.5	22.0	18.0
4	---	---	---	0.0	---	---	---	---	16.5	24.5	22.0	17.0
5	---	---	---	---	---	---	---	---	16.0	25.5	21.5	17.0
6	---	---	---	---	---	---	0.5	---	16.5	27.0	23.5	17.0
7	---	---	---	---	---	---	---	---	17.0	25.5	21.0	15.5
8	---	---	---	---	---	---	---	---	16.5	24.5	22.5	16.0
9	---	---	---	---	0.0	0.5	---	---	15.0	24.0	22.0	16.5
10	---	---	1.0	---	---	---	---	---	16.0	26.5	22.0	15.0
11	---	---	---	---	---	---	---	---	15.5	23.5	23.5	14.5
12	---	---	---	---	---	---	---	---	17.5	24.0	22.0	14.0
13	---	---	---	---	---	---	2.0	---	18.0	24.0	22.5	14.0
14	---	---	0.0	---	---	---	---	---	18.5	25.5	20.0	12.0
15	---	---	---	---	---	---	0.5	---	19.0	26.5	20.5	14.5
16	---	1.0	---	---	1.0	---	3.0	---	19.0	26.0	17.5	13.0
17	7.5	---	0.0	---	---	0.5	2.0	---	19.0	24.0	18.0	14.0
18	---	---	---	---	---	---	2.0	---	19.0	23.5	14.0	12.5
19	---	0.0	---	---	---	---	3.0	16.0	18.0	25.0	14.5	10.5
20	---	---	---	---	0.0	---	3.0	15.0	19.5	25.0	15.0	10.0
21	---	---	0.0	0.0	---	---	3.0	---	19.5	24.5	16.0	9.5
22	---	---	---	---	---	---	3.0	14.0	20.0	24.5	17.0	12.5
23	---	1.0	---	---	1.0	0.5	4.0	14.0	21.5	23.0	20.5	10.0
24	---	---	---	---	---	---	9.0	14.0	25.5	23.5	17.5	10.0
25	---	---	---	---	---	---	8.0	13.0	24.5	24.0	17.0	11.0
26	---	---	---	1.0	---	---	8.0	13.5	22.0	24.0	18.5	11.0
27	---	---	---	---	---	---	8.0	14.0	23.0	25.0	19.0	11.0
28	---	---	0.0	---	---	0.5	7.0	15.0	22.5	26.0	20.5	12.5
29	---	---	---	---	---	---	---	14.5	22.0	27.0	21.0	11.0
30	---	0.5	---	---	---	---	7.0	14.0	23.0	27.0	20.5	10.5
31	---	---	---	---	---	---	---	15.0	---	24.5	---	---
MONTH	---	---	---	---	---	---	---	---	19.0	24.5	20.0	13.0

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, N. DAK.--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	4.8	10	.13	7.8	12	.25	6.0	16	.26
2	5.6	10	.15	8.1	12	.26	5.8	16	.25
3	5.6	10	.15	8.8	12	.29	5.6	16	.24
4	5.8	10	.16	8.0	11	.24	5.6	16	.24
5	5.6	10	.15	8.1	11	.24	5.6	16	.24
6	6.2	10	.17	7.6	11	.23	5.6	15	.23
7	6.3	10	.17	7.4	11	.22	5.4	15	.22
8	6.3	10	.17	11	20	.59	5.4	14	.20
9	6.9	10	.19	13	25	.88	5.4	14	.20
10	7.1	10	.19	12	20	.65	5.6	14	.21
11	6.4	10	.17	11	18	.53	5.6	13	.20
12	6.9	10	.19	10	18	.49	5.8	13	.20
13	8.0	11	.24	9.9	16	.43	5.8	13	.20
14	9.2	11	.27	9.0	16	.39	5.8	13	.20
15	8.3	11	.25	9.7	16	.42	6.0	13	.21
16	9.6	12	.31	9.2	15	.37	6.0	12	.19
17	13	20	.70	8.5	15	.34	6.2	12	.20
18	12	18	.58	8.3	15	.34	6.2	12	.20
19	11	16	.48	8.1	15	.33	6.0	12	.19
20	9.9	15	.40	8.1	15	.33	6.2	12	.20
21	9.4	14	.36	8.0	15	.32	6.4	12	.21
22	9.0	14	.34	7.8	15	.32	6.2	12	.20
23	9.9	18	.48	7.6	15	.31	6.0	12	.19
24	11	20	.59	7.4	15	.30	6.0	12	.19
25	9.0	18	.44	7.2	15	.29	6.0	12	.19
26	8.5	16	.37	7.0	15	.28	6.0	12	.19
27	8.5	15	.34	6.8	15	.28	6.0	12	.19
28	8.3	14	.31	6.6	15	.27	6.0	12	.19
29	8.0	14	.30	6.4	15	.26	6.0	12	.19
30	7.8	13	.27	6.2	15	.25	6.0	12	.19
31	7.8	13	.27	---	---	---	6.0	12	.19
MONTH	251.7	---	---	254.6	---	---	182.2	---	---

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	6.0	12	.19	5.5	11	.16	5.0	11	.15
2	6.0	12	.19	5.5	11	.16	5.0	11	.15
3	6.0	12	.19	5.5	11	.16	5.0	11	.15
4	6.0	12	.19	5.5	11	.16	5.0	11	.15
5	6.0	12	.19	5.5	11	.16	5.0	11	.15
6	6.0	12	.19	5.0	11	.15	5.0	11	.15
7	6.0	12	.19	5.0	11	.15	5.0	11	.15
8	6.0	12	.19	5.0	11	.15	5.0	11	.15
9	5.5	12	.18	5.0	11	.15	5.0	11	.15
10	5.5	12	.18	5.0	11	.15	5.0	11	.15
11	5.5	12	.18	5.0	11	.15	5.0	11	.15
12	5.5	12	.18	5.0	11	.15	5.0	11	.15
13	6.0	12	.19	5.0	11	.15	5.0	11	.15
14	6.0	12	.19	5.0	11	.15	5.5	11	.16
15	6.0	12	.19	5.0	11	.15	5.5	12	.18
16	6.0	12	.19	5.0	11	.15	5.5	16	.24
17	6.0	12	.19	5.0	11	.15	6.0	20	.32
18	6.0	12	.19	5.0	11	.15	6.5	30	.53
19	5.5	12	.18	5.0	11	.15	6.5	40	.70
20	5.5	12	.18	5.0	11	.15	7.0	50	.95
21	5.5	12	.18	5.0	11	.15	7.0	50	.95
22	5.5	12	.18	5.0	11	.15	7.0	50	.95
23	5.5	12	.18	5.0	11	.15	7.0	40	.76
24	5.5	12	.18	5.0	11	.15	7.0	40	.76
25	5.5	12	.18	5.0	11	.15	6.5	30	.53
26	5.5	12	.18	5.0	11	.15	6.5	30	.53
27	5.5	12	.18	5.0	11	.15	6.5	30	.53
28	5.5	12	.18	5.0	11	.15	6.5	25	.44
29	5.5	12	.18	---	---	---	6.0	25	.41
30	5.5	12	.18	---	---	---	6.0	20	.32
31	5.5	12	.18	---	---	---	6.0	20	.32
MONTH	177.5	---	---	142.5	---	---	179.5	---	---

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, N. DAK.--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	6.0	18	.29	5400	75	1090	894	212	512
2	6.0	18	.29	5550	75	1120	828	183	409
3	6.0	18	.29	5780	81	1260	741	167	334
4	6.0	16	.26	6300	91	1550	673	175	318
5	6.0	16	.26	6750	94	1710	610	170	280
6	6.0	16	.26	6690	81	1460	520	159	223
7	6.0	16	.26	6480	71	1240	433	144	168
8	6.0	16	.26	6180	67	1120	389	130	137
9	6.0	14	.23	5880	64	1020	468	126	159
10	6.0	14	.23	5620	61	926	708	136	260
11	6.0	14	.23	5320	62	891	978	155	409
12	8.0	20	.43	5100	65	895	1220	137	451
13	10	25	.68	4880	71	935	1270	103	353
14	20	40	2.2	4690	82	1040	1210	100	327
15	100	60	16	4470	94	1130	1120	105	318
16	300	50	40	4220	107	1220	1040	99	278
17	600	50	81	3960	115	1230	939	93	236
18	1000	75	202	3690	121	1210	838	93	210
19	1400	117	442	3450	138	1290	778	95	200
20	1720	96	446	3240	178	1560	768	110	228
21	2100	115	652	2940	254	2020	708	87	166
22	2460	135	897	2620	306	2160	613	68	113
23	2880	158	1230	2250	276	1680	509	74	102
24	3010	160	1300	2120	232	1330	457	73	90
25	3050	138	1140	1860	209	1050	415	69	77
26	3080	172	1430	1720	207	961	327	58	51
27	3160	186	1590	1610	199	865	351	47	45
28	3290	162	1440	1510	198	807	331	46	41
29	3560	119	1140	1380	200	745	297	44	35
30	4040	87	949	1190	205	659	269	53	38
31	---	---	---	1010	213	581	---	---	---
MONTH	35854.0	---	---	123860	---	---	20702	---	---

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	258	46	32	42	26	2.9	267	93	67
2	274	39	29	40	24	2.6	202	62	34
3	276	47	35	45	34	4.1	146	33	13
4	241	33	21	44	37	4.4	122	36	12
5	226	30	18	42	28	3.2	102	42	12
6	213	30	17	37	26	2.6	94	40	10
7	198	30	16	37	30	3.0	99	46	12
8	170	33	15	44	42	5.0	99	40	11
9	155	40	17	42	40	4.5	89	35	8.4
10	152	36	15	43	26	3.0	77	38	7.9
11	145	70	27	40	30	3.2	68	28	5.1
12	133	57	20	35	38	3.6	59	30	4.8
13	126	39	13	33	41	3.7	52	27	3.8
14	123	32	11	31	36	3.0	47	52	6.6
15	114	28	8.6	28	34	2.6	42	47	5.3
16	102	31	8.5	27	30	2.2	40	60	6.5
17	108	30	8.7	26	34	2.4	40	72	7.8
18	111	38	11	26	46	3.2	51	60	8.3
19	111	34	10	28	41	3.1	87	65	15
20	89	25	6.0	31	33	2.8	116	69	22
21	81	27	5.9	31	31	2.6	172	88	41
22	80	28	6.0	30	21	1.7	416	152	171
23	80	32	6.9	28	10	.76	384	88	91
24	77	31	6.4	27	11	.80	301	73	59
25	74	28	5.6	33	14	1.2	256	63	44
26	70	28	5.3	35	26	2.5	227	53	32
27	63	28	4.8	39	48	5.1	207	50	28
28	57	28	4.3	46	62	7.7	190	52	27
29	53	29	4.2	67	41	7.4	170	43	20
30	48	29	3.8	67	41	7.4	150	42	17
31	44	28	3.3	98	63	17	---	---	---
MONTH	4052	---	---	1222	---	---	4372	---	---
YEAR	191250.0		57689.12						

RED RIVER OF THE NORTH BASIN

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, N. DAK.

LOCATION.--Lat 48°22'20", long 101°30'18", in SW¼SE¼ sec.34, T.157 N., R.84 W., Ward County, on left bank 30 ft (9.1 m) upstream from county highway bridge, 3 mi (4.8 km) east of Foxholm, 19 mi (30.6 km) upstream from Des Lacs River, and at mile 414.5 (kilometre 666.9).

DRAINAGE AREA.--9,470 mi² (24,530 km²), approximately, of which about 6,200 mi² (16,100 km²) is probably noncontributing.

PERIOD OF RECORD.--Chemical analyses: October 1972 to current year.

Specific conductance: October 1972 to current year.

Water temperature: October 1972 to current year.

EXTREMES.--Period of record:

Specific conductance: Maximum daily, 1,320 micromhos Jan. 4, 5, 1974; minimum daily 234 micromhos, June 26, 1974.

Water temperature: Maximum daily, 28.0°C on several days during July 1974; minimum daily, freezing point on many days during winter months.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL ALUM- INUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL IRON IN BOTTOM MA- TERIAL (UG/G)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MANGA- NESE IN BOTTOM MA- TERIAL (UG/G)	DIS- SOLVED CAL- CIUM (CA) (MG/L)
OCT.												
18...	1500	30	8.9	--	--	20	11000	--	--	310	810	51
NOV.												
21...	1400	34	2.0	--	--	20	--	--	--	63	--	51
DEC.												
19...	1545	32	2.0	<100	320	--	--	100	--	--	--	55
JAN.												
23...	1215	17	2.4	--	--	10	--	--	--	150	--	56
FEB.												
19...	1050	16	4.0	--	--	10	--	--	--	220	--	60
MAR.												
21...	1215	36	4.4	--	--	30	--	--	--	270	--	63
APR.												
16...	1430	650	6.4	200	570	20	--	630	50	580	--	56
24...	1050	1200	--	--	--	--	--	--	--	--	--	--
MAY												
01...	1615	3320	--	--	--	--	--	--	--	--	--	--
21...	1530	5000	8.6	--	--	110	--	--	--	30	--	38
28...	1955	2980	--	--	--	--	--	--	--	--	--	--
JUNE												
19...	1200	1200	.7	--	--	130	--	--	--	130	--	36
JULY												
24...	1400	120	2.4	200	250	230	--	260	250	10	--	44
AUG.												
14...	1015	95	4.3	--	--	10	--	--	--	20	--	44
SEP.												
18...	1130	84	1.4	--	--	20	--	--	--	80	--	51

DATE	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE IN BOT. MAT. (MG/KG)	AMMONIA NITRO- GEN (N) (MG/L)
OCT.												
18...	21	56	11	237	0	194	140	12	.1	.29	.1	.09
NOV.												
21...	26	62	13	251	--	206	140	14	.2	.10	--	.13
DEC.												
19...	26	68	13	252	--	207	160	16	.2	.08	--	.12
JAN.												
23...	26	70	13	281	--	230	170	15	.2	.15	--	.14
FEB.												
19...	31	75	13	306	--	251	190	18	.2	.09	--	.17
MAR.												
21...	36	78	5.7	305	0	250	190	19	.4	.02	--	.10
APR.												
16...	30	72	10	278	0	228	160	19	.3	.09	--	.25
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
21...	19	42	9.4	158	0	130	130	7.5	.2	.27	--	.00
28...	--	--	--	--	--	--	--	--	--	--	--	--
JUNE												
19...	19	34	9.3	173	0	142	92	7.4	.1	.02	--	.00
JULY												
24...	20	38	10	216	0	177	81	9.2	.2	.04	--	.04
AUG.												
14...	20	40	11	234	0	192	78	9.2	.2	.05	--	.01
SEP.												
18...	25	50	12	255	2	212	110	11	.2	.02	--	.00

RED RIVER OF THE NORTH BASIN

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05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL KJEL- NITRO- GEN IN BOTTOM MAT. (MG/KG)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHOPHOS- PHORUS (P) (MG/L)	TOTAL PHOS- PHORUS IN BOT- TOM MA- TERIAL (MG/KG)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO
OCT. 18...	1.6	1.7	40	.10	.01	350	.57	33.9	210	19	35	1.7
NOV. 21...	.81	.94	--	.07	.01	--	.59	39.8	230	29	35	1.8
DEC. 19...	.81	.93	--	.05	.02	--	.63	40.2	240	38	36	1.9
JAN. 23...	1.1	1.2	--	.09	.01	--	.67	22.6	250	16	37	1.9
FEB. 19...	.69	.86	--	.07	.04	--	.74	23.5	280	26	36	2.0
MAR. 21...	.88	.98	--	.07	.01	--	.74	53.2	310	55	35	1.9
APR. 16...	.75	1.0	--	.10	.00	--	.67	864	260	35	36	1.9
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 01...	--	--	--	--	--	--	--	--	--	--	--	--
21...	.85	.85	--	.10	.03	--	.45	4510	170	44	33	1.4
28...	--	--	--	--	--	--	--	--	--	--	--	--
JUNE 19...	1.5	1.5	--	.18	.10	--	.39	920	170	26	29	1.1
JULY 24...	1.4	1.4	--	.24	.12	--	.42	101	190	15	29	1.2
AUG. 14...	1.4	1.4	--	.37	.18	--	.44	82.9	190	0	30	1.3
SEP. 18...	3.0	3.0	--	.31	.13	--	.53	88.2	230	18	31	1.4

DATE	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	CHEM- ICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT. 18...	655	8.4	10.0	20	10	9.6	94	32	4.2	84	84	--
NOV. 21...	725	7.8	1.5	20	5	10.2	77	23	.7	884	82	--
DEC. 19...	775	8.0	.5	10	1	9.6	70	30	.5	--	--	--
JAN. 23...	760	7.8	.5	20	5	8.8	65	19	.8	85	<1	--
FEB. 19...	845	7.9	.5	20	4	8.0	59	27	.8	95	27	--
MAR. 21...	885	8.2	2.0	20	4	12.2	93	34	--	819	84	--
APR. 16...	810	7.8	3.0	15	10	9.2	72	29	2.5	780	--	--
24...	850	--	5.0	--	--	--	--	--	--	--	--	--
MAY 01...	700	--	5.0	--	--	--	--	--	--	--	--	--
21...	520	7.9	13.0	45	15	7.7	77	31	2.6	855	82	--
28...	480	--	16.0	--	--	--	--	--	--	--	--	--
JUNE 19...	475	8.2	18.5	45	25	7.5	84	40	2.6	815	E280	--
JULY 24...	530	8.5	24.0	20	15	7.8	97	36	4.8	920	B17	16
AUG. 14...	570	8.3	21.5	45	20	6.8	81	39	3.3	B170	48	--
SEP. 18...	625	8.6	14.0	29	15	7.4	76	46	5.9	B2333	62	--

E - Estimated.

B - Results based on colony count outside the acceptable range.

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	ORGANIC CARBON IN BOTTOM MATERIAL (C) (G/KG)	CYANIDE (CN) (MG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL CHLOR-DANE (UG/L)	CHLOR-DANE IN BOTTOM MATERIAL (UG/KG)	TOTAL DDD (UG/L)	DDD IN BOTTOM MATERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MATERIAL (UG/KG)
OCT. 18...	2.7	--	--	--	.0	--	0	--	.0	--	.0
NOV. 21...	--	--	--	--	--	--	--	--	--	--	--
DEC. 19...	--	.00	--	--	--	--	--	--	--	--	--
JAN. 23...	--	--	.0	--	--	--	--	--	--	--	--
FEB. 19...	--	--	.0	--	--	--	--	--	--	--	--
MAR. 21...	--	--	.1	--	--	--	--	--	--	--	--
APR. 16...	--	.00	.0	.00	--	.0	--	.00	--	.00	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAY 01...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	.0	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUNE 19...	--	--	.0	--	--	--	--	--	--	--	--
JULY 24...	--	.01	.0	--	--	--	--	--	--	--	--
AUG. 14...	--	--	.0	--	--	--	--	--	--	--	--
SEP. 18...	--	--	.1	--	--	--	--	--	--	--	--

DATE	TOTAL DDT (UG/L)	DDT IN BOTTOM MATERIAL (UG/KG)	TOTAL DI-AZINON (UG/L)	DI-AZINON IN BOTTOM MATERIAL (UG/KG)	TOTAL DI-ELDRIN (UG/L)	DI-ELDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTA-CHLOR (UG/L)	HEPTA-CHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTA-CHLOR EPOXIDE (UG/L)	HEPTA-CHLOR EPOXIDE IN BOTTOM MATERIAL (UG/KG)
OCT. 18...	--	.0	--	.0	--	.1	--	.0	--	.0	--	.0
APR. 16...	.00	--	.00	--	.00	--	.00	--	.00	--	.00	--

DATE	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MATERIAL (UG/KG)	TOTAL MALA-THION (UG/L)	MALA-THION IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL PARA-THION (UG/L)	METHYL PARA-THION IN BOTTOM MATERIAL (UG/KG)	TOTAL PARA-THION (UG/L)	PARA-THION IN BOTTOM MATERIAL (UG/KG)	TOTAL PCB (UG/L)	PCB IN BOTTOM MATERIAL (UG/KG)	TOTAL TOX-APHENE (UG/L)	TOX-APHENE IN BOTTOM MATERIAL (UG/KG)
OCT. 18...	--	.0	--	.0	--	.0	--	.0	--	0	--	0
APR. 16...	.00	--	.00	--	.00	--	.00	--	.0	--	0	--

DATE	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MATERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MATERIAL (UG/KG)	TOTAL SILVEX (UG/L)	SILVEX IN BOTTOM MATERIAL (UG/KG)	TOTAL ARSENIC (AS) (UG/L)	TOTAL ARSENIC IN BOTTOM MATERIAL (UG/G)	TOTAL BARIUM (BA) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	TOTAL BORON (B) (UG/L)
OCT. 18...	--	0	--	0	--	0	--	2	--	--	--
DEC. 19...	--	--	--	--	--	--	--	2	--	<100	<10
APR. 16...	.00	--	.00	--	.00	--	4	--	200	<10	210
JULY 24...	--	--	--	--	--	--	12	--	100	0	110

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TOTAL CADMIUM (CD) (UG/L)	TOTAL CADMIUM IN BOTTOM MATERIAL (UG/G)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL CHROMIUM IN BOTTOM MATERIAL (UG/G)	TOTAL COBALT (CO) (UG/L)	TOTAL COBALT IN BOTTOM MATERIAL (UG/G)	TOTAL COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM MATERIAL (UG/G)	TOTAL LEAD (PB) (UG/L)	TOTAL LEAD IN BOTTOM MATERIAL (UG/G)	TOTAL LITHIUM (LI) (UG/L)
OCT. 18...	--	<1	--	5	--	<5	--	11	--	20	--
DEC. 19...	<10	--	<10	--	<50	--	20	--	<100	--	40
APR. 16...	<10	--	0	--	<50	--	10	--	<100	--	20
JULY 24...	<10	--	0	--	<50	--	10	--	<100	--	10

DATE	TOTAL MERCURY (HG) (UG/L)	TOTAL MERCURY IN BOTTOM MATERIAL (UG/G)	TOTAL MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	TOTAL SELENIUM IN BOTTOM MATERIAL (UG/G)	TOTAL SILVER (AG) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM MATERIAL (UG/G)	SUSPENDED SEDIMENT (MG/L)
OCT. 18...	--	.0	--	--	--	0	--	--	--	52	18
NOV. 21...	--	--	--	--	--	--	--	--	--	--	8
DEC. 19...	.1	--	3	<50	1	--	<10	2800	8	--	4
JAN. 23...	--	--	--	--	--	--	--	--	--	--	4
FEB. 19...	--	--	--	--	--	--	--	--	--	--	32
MAR. 21...	--	--	--	--	--	--	--	--	--	--	6
APR. 16...	.0	--	3	50	0	--	<10	210	20	--	55
MAY 21...	--	--	--	--	--	--	--	--	--	--	10
JUNE 19...	--	--	--	--	--	--	--	--	--	--	62
JULY 24...	.0	--	2	50	0	--	<10	200	20	--	12
AUG. 14...	--	--	--	--	--	--	--	--	--	--	28
SEP. 18...	--	--	--	--	--	--	--	--	--	--	24

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT AND BED MATERIAL, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	BED MAT. FALL DIAM. % FINER THAN .004 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM
OCT. 18...	1500	18	1.5	14	23	24	27
NOV. 21...	1400	8	.73	--	--	--	--
DEC. 19...	1545	4	.35	--	--	--	--
JAN. 23...	1215	4	.18	--	--	--	--
FEB. 19...	1050	32	1.4	--	--	--	--
MAR. 21...	1215	6	.58	--	--	--	--
APR. 16...	1430	55	97	21	33	35	36
MAY 21...	1530	10	135	--	--	--	--
JUNE 19...	1200	62	201	--	--	--	--
JULY 24...	1400	12	3.9	--	--	--	--
AUG. 14...	1015	28	7.2	--	--	--	--
SEP. 18...	1130	24	5.4	--	--	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
OCT. 18...	37	40	50	60	66	72	100
APR. 16...	54	61	64	67	76	88	100

RED RIVER OF THE NORTH BASIN

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1					---	---	741	736	---	---	840	837
2					---	---	734	732	---	---	843	841
3					---	---	737	729	---	---	844	841
4					---	---	735	730	---	---	842	839
5					---	---	733	730	830	828	843	840
6					---	---	734	729	829	829	844	838
7					---	---	738	730	836	831	842	839
8					---	---	736	733	840	838	846	837
9					---	---	737	726	842	836	844	841
10					---	---	754	735	838	835	842	842
11					---	---	762	754	836	836	842	840
12					---	---	760	758	841	835	864	843
13					---	---	767	750	839	837	871	858
14					---	---	770	765	838	835	878	865
15					---	---	766	763	840	837	888	876
16					---	---	772	766	844	838	883	880
17					---	---	778	767	843	840	883	877
18					---	---	779	776	848	841	881	875
19					---	---	782	779	846	843	882	876
20					---	---	786	780	847	844	883	880
21					767	762	786	784	848	842	887	881
22					761	756	793	787	846	837	887	877
23					759	759	793	791	843	840	877	871
24					758	755	794	791	844	836	877	874
25					756	751	798	795	836	831	873	864
26					751	746	---	---	840	834	864	855
27					749	747	---	---	844	830	858	844
28					744	742	---	---	845	836	843	835
29					745	740	---	---	---	---	852	843
30					743	740	---	---	---	---	854	846
31					738	736	---	---	---	---	851	846
MONTH					---	---	798	726	848	828	888	835

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	854	848			---	---	506	503	538	537	657	649
2	851	842			---	---	508	500	548	541	654	632
3	896	845			---	---	507	498	555	549	664	653
4	883	850			---	---	507	497	557	552	665	660
5	850	839			---	---	507	502	560	553	665	654
6	844	838			---	---	508	505	570	559	657	644
7	844	838			---	---	526	508	575	550	649	636
8	858	841			---	---	511	505	567	545	635	628
9	894	860			---	---	510	504	550	539	647	631
10	916	879			---	---	511	502	556	550	648	641
11	907	824			---	---	505	503	565	556	646	639
12	821	799			---	---	510	503	565	560	643	630
13	816	810			---	---	509	507	573	563	635	626
14	816	805			---	---	514	507	571	565	626	620
15	810	799			---	---	516	512	567	575	620	616
16	807	799			---	---	518	512	574	570	616	610
17	816	808			---	---	516	503	574	570	626	616
18	819	808			---	---	510	505	571	567	628	566
19	820	812			---	---	512	505	573	567	583	560
20	830	820			484	467	531	510	574	570	590	582
21	834	825			491	483	542	529	573	569	607	590
22	844	827			491	487	546	540	574	568	616	600
23	848	844			495	490	546	535	574	553	620	612
24	856	848			497	492	538	531	584	581	625	611
25	863	854			501	494	533	528	595	585	642	615
26	---	---			508	499	536	529	596	586	654	630
27	---	---			515	508	539	529	590	583	630	604
28	---	---			510	507	543	532	593	584	613	590
29	---	---			505	497	544	534	602	592	609	540
30	---	---			506	499	539	531	614	601	566	535
31	---	---			---	---	541	528	635	614	---	---
MONTH	916	799			---	---	546	497	635	537	665	535

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, N. DAK.--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1					---	---	0.5	0.0	---	---	1.0	0.5
2					---	---	0.5	0.5	---	---	1.5	0.5
3					---	---	0.5	0.0	---	---	1.5	0.5
4					---	---	0.5	0.0	---	---	1.5	1.0
5					---	---	0.5	0.5	0.0	0.0	1.5	0.5
6					---	---	0.5	0.5	0.5	0.0	1.5	0.5
7					---	---	0.5	0.5	0.5	0.5	1.0	0.0
8					---	---	0.5	0.5	0.5	0.0	1.0	0.0
9					---	---	0.5	0.5	0.5	0.0	1.5	0.5
10					---	---	0.5	0.0	0.5	0.5	1.5	0.5
11					---	---	0.0	0.0	0.5	0.5	1.5	0.5
12					---	---	0.0	0.0	0.5	0.5	1.0	0.0
13					---	---	0.5	0.0	0.5	0.5	1.5	0.5
14					---	---	0.5	0.5	0.5	0.5	2.0	1.0
15					---	---	1.0	0.5	0.5	0.5	2.5	1.5
16					---	---	0.5	0.0	0.5	0.5	3.0	1.5
17					---	---	0.5	0.0	0.5	0.5	2.5	2.0
18					---	---	0.5	0.5	0.5	0.5	3.5	1.5
19					---	---	0.5	0.5	0.5	0.5	3.5	2.0
20					0.5	0.5	0.5	0.5	1.0	0.5	2.5	2.0
21					1.0	0.5	0.5	0.5	1.0	0.5	2.5	2.0
22					1.0	0.5	0.5	0.5	0.5	0.0	2.0	1.0
23					0.5	0.0	0.5	0.5	0.5	0.0	1.0	0.5
24					0.5	0.0	0.5	0.5	1.0	0.5	0.5	0.0
25					0.5	0.5	0.5	0.5	1.0	0.5	2.5	0.5
26					0.5	0.5	---	---	0.5	0.0	2.0	0.5
27					0.5	0.5	---	---	1.5	0.5	2.0	0.5
28					0.5	0.5	---	---	1.0	0.5	1.0	0.0
29					0.5	0.0	---	---	---	---	2.0	0.0
30					0.5	0.0	---	---	---	---	2.0	1.5
31					0.5	0.0	---	---	---	---	2.0	0.5
MONTH					---	---	1.0	0.0	1.5	0.0	3.5	0.0

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	2.0	1.0			---	---	23.5	22.5	25.5	24.0	20.5	19.0
2	2.5	1.5			---	---	25.0	23.0	24.5	22.5	18.5	17.0
3	2.5	1.0			---	---	25.0	23.5	24.5	22.5	17.5	15.5
4	2.0	0.5			---	---	25.5	24.0	25.0	22.0	18.0	16.0
5	1.5	1.0			---	---	27.0	25.0	23.5	21.5	17.5	15.5
6	2.0	1.0			---	---	27.5	25.5	23.5	21.5	16.5	16.0
7	1.5	1.0			---	---	27.5	24.5	24.5	22.5	16.0	15.0
8	1.0	0.0			---	---	26.0	24.5	23.0	21.0	16.0	14.5
9	1.5	0.5			---	---	25.0	24.0	22.5	21.0	17.0	14.5
10	2.5	0.5			---	---	24.5	23.0	22.5	20.0	17.0	15.5
11	1.0	0.0			---	---	24.0	22.5	23.0	20.5	15.0	13.0
12	0.5	0.0			---	---	24.5	22.5	22.5	20.5	13.5	12.0
13	0.5	0.0			---	---	24.5	23.5	22.5	19.5	14.0	11.5
14	1.0	0.0			---	---	25.5	23.0	22.5	20.5	15.5	12.5
15	2.0	0.5			---	---	26.5	24.5	22.5	20.5	16.5	14.0
16	3.0	2.0			---	---	28.0	25.0	21.0	19.0	16.5	13.5
17	3.5	3.0			---	---	27.0	25.5	20.0	17.5	16.5	15.0
18	3.5	3.0			---	---	25.5	24.0	19.0	17.0	16.0	10.0
19	4.0	2.5			19.0	18.0	24.0	22.5	18.0	16.0	10.0	9.0
20	5.0	4.0			20.0	17.5	25.0	22.0	17.5	16.5	9.5	8.5
21	6.5	4.5			21.0	19.0	25.5	22.5	18.5	17.0	10.5	8.0
22	7.0	5.5			21.5	19.5	25.5	23.0	19.0	17.0	12.0	9.5
23	6.0	5.5			23.0	20.0	25.0	23.5	20.5	18.5	13.5	12.5
24	6.0	5.0			23.5	21.5	24.5	22.0	20.5	19.0	14.0	12.5
25	6.0	5.0			23.5	22.0	25.0	22.5	19.0	17.0	14.5	13.0
26	---	---			23.5	21.5	25.5	23.0	18.0	15.5	14.0	13.5
27	---	---			22.0	20.5	25.5	23.0	19.5	17.0	14.5	14.0
28	---	---			22.5	21.0	26.5	24.0	20.5	17.5	14.5	14.0
29	---	---			22.5	21.0	27.5	25.0	21.5	19.5	14.5	14.0
30	---	---			24.0	22.0	27.0	24.5	22.0	19.5	14.5	14.0
31	---	---			---	---	26.5	25.5	21.5	19.5	---	---
MONTH	7.0	0.0			---	---	28.0	22.0	25.5	15.5	20.5	8.0

PHYTOPLANKTON

DATE	TOTAL COUNT CELLS/ML	DOMINANT GENERA	PERCENT COMPOSITION	ALGAL GROUP
741121	470	<u>Cyclotella</u>	71	Diatom
741219	250	<u>Schroederia</u> <u>Nitzschia</u>	67 17	Green Diatom
750123	110	<u>Nitzschia</u> <u>Cocconeis</u>	43 29	Diatom Diatom
750219	150	<u>Synedra</u> <u>Schroederia</u> <u>Nitzschia</u>	33 28 17	Diatom Green Diatom
750321	3,000	<u>Euglena</u> <u>Chlamydomonas</u> <u>Cyclotella</u>	33 30 15	Flagellate Flagellate Diatom
750416	780	<u>Cyclotella</u> <u>Anacystis</u>	25 20	Diatom Blue-green
750521	7,600	<u>Anacystis</u> <u>Fragilaria</u>	26 23	Blue-green Diatom
750619	1,300	<u>Cyclotella</u> <u>Asterionella</u>	50 40	Diatom Diatom
750724	6,800	<u>Anacystis</u>	51	Blue-green
750814	9,900	<u>Anacystis</u>	56	Blue-green

PERIPHYTON

Collected by plastic strips samplers placed in the stream approximately one month prior to collection date.

DATE	DRY WEIGHT G/M ²	ASH WEIGHT G/M ²	CHLOROPHYLL A G/M ²	CHLOROPHYLL B G/M ²
741118	38	93	--	--
750123	2.3	78	--	--

DISSOLVED OXYGEN PROFILE, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

HOURL	MG/L	HOURL	MG/L	HOURL	MG/L	HOURL	MG/L
Dec. 19, 1974		0700	8.8	May 22, 1975		1900	9.0
1300	9.2	0800	9.0	0100	7.7	2000	9.0
1400	9.4	0900	8.8	0200	7.3	2100	8.7
1500	9.6	1000	8.8	0300	7.1	2200	8.3
1600	9.6	1100	9.0	0400	7.0	2300	7.8
1700	9.7	1200	9.0	0500	6.6	2400	7.4
1800	9.6			0600	5.2		
1900	9.5	May 21, 1975		0700	6.0	July 25, 1975	
2000	9.5	1300	7.2	0800	6.2	0100	7.2
2100	9.7	1400	7.4	0900	6.2	0200	6.9
2200	9.7	1500	7.6	1000	6.4	0300	6.7
2300	9.3	1600	7.8	1100	6.6	0400	6.7
2400	9.1	1700	8.0	1200	6.8	0500	6.7
		1800	8.0			0600	6.6
		1900	8.0	July 24, 1975		0700	6.6
Dec. 20, 1974		2000	8.2	1300	7.8	0800	6.6
0100	9.1	2100	8.4	1400	8.0	0900	6.8
0200	8.6	2200	8.3	1500	8.5	1000	6.9
0300	8.6	2300	8.1	1600	8.8	1100	7.3
0400	8.8	2400	7.9	1700	9.0	1200	7.6
0500	9.0			1800	9.1		
0600	9.0						

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, N. DAK.

LOCATION.--Lat 48°09'35", long 100°43'45", in NW&SW¼ sec.17, T.154 N., R.78 W., McHenry County, at gaging station, 2.7 mi (4.3 km) north of Verendrye, 19 mi (31 km) upstream from mouth of Wintering River, and at mile 302.0 (kilometre 485.9).

DRAINAGE AREA.--11,300 mi² (29,300 km²), approximately, of which about 6,900 mi² (17,900 km²) is probably noncontributing.

PERIOD OF RECORD.--Chemical analyses: October 1949 to August 1951, August 1952 to current year.

Specific conductance: October 1973 to current year.

Water temperature: October 1973 to current year.

EXTREMES.--Current year:

Specific conductance: Maximum recorded, 1,640 micromhos, Dec. 9, 10; minimum recorded, 465 micromhos, Apr. 30.

Water temperatures: Maximum recorded, 26.0°C July 7, 16, 17 and 30; minimum, 0.0°C on many days during winter months.

Period of record:

Specific conductance: Maximum recorded, 2,070 micromhos, Feb. 27, 1974; minimum recorded, 465 micromhos, Apr. 30, 1975.

Water temperatures: Maximum recorded, 28.0°C July 19, 1974; minimum, freezing point on many days during winter months.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
OCT.											
15...	1835	48	8.4	--	--	--	37	34	120	13	354
NOV.											
18...	1749	69	8.1	--	--	--	69	34	120	9.2	386
DEC.											
17...	0945	44	8.8	--	--	--	84	42	130	14	429
JAN.											
20...	1715	35	11	--	--	--	83	38	120	13	415
FEB.											
18...	1510	24	14	--	--	--	88	46	110	13	453
MAR.											
18...	1300	E84	9.1	--	--	--	73	39	100	16	353
APR.											
17...	1730	1190	5.8	40	80	150	32	16	45	9.1	156
MAY											
02...	1650	4420	--	--	--	--	--	--	--	--	--
13...	2100	5200	--	--	--	--	--	--	--	--	--
14...	1600	E5200	5.8	--	--	--	42	21	54	9.8	178
JUNE											
11...	1320	2160	7.6	--	--	--	45	22	55	11	209
JULY											
29...	1440	220	7.3	--	--	--	63	36	92	12	334
AUG.											
13...	1810	210	9.7	--	--	--	71	39	130	14	376
SEP.											
15...	1345	180	10	--	--	--	57	30	98	15	311

DATE	CAR- BONATE (CO3) (MG/L)	ALKA- LINITY AS CACO3 (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
OCT.										
15...	0	290	230	20	.2	.00	.09	.29	.18	.12
NOV.										
18...	--	317	230	23	.2	.08	.04	.23	.12	.08
DEC.										
17...	--	352	270	28	.2	.28	.31	.28	.21	.15
JAN.										
20...	--	340	270	25	.2	.49	.24	.16	.13	.08
FEB.										
18...	--	372	260	28	.2	.55	.27	.13	.04	.03
MAR.										
18...	0	290	250	27	.5	.57	.15	.16	.10	.12
APR.										
17...	0	128	100	9.3	.1	.86	.16	.33	.12	.06
MAY										
02...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
14...	0	146	140	14	.1	.34	.03	.13	.06	.04
JUNE										
11...	0	171	130	8.6	.1	.16	.08	.27	.14	.10
JULY										
29...	0	274	190	20	.2	.05	.03	.33	.12	.09
AUG.										
13...	0	308	270	40	.3	.02	.00	.63	.33	.26
SEP.										
15...	0	255	200	17	.2	.38	.03	.38	.21	.16

E - Estimated.

RED RIVER OF THE NORTH BASIN

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CAL- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)
OCT.										
15...	694	.94	89.9	230	0	51	3.4	1040	8.6	7.0
NOV.										
18...	750	1.02	140	310	0	45	3.0	1120	8.2	.0
DEC.										
17...	820	1.12	97.4	380	31	41	2.9	1230	7.8	.0
JAN.										
20...	777	1.06	73.4	360	23	41	2.7	1070	7.3	.0
FEB.										
18...	822	1.12	53.3	410	38	36	2.4	1180	7.4	.0
MAR.										
18...	688	.94	156	340	53	37	2.4	1060	8.1	.0
APR.										
17...	331	.45	1060	150	18	38	1.6	510	7.8	.0
MAY										
02...	--	--	--	--	--	--	--	540	--	6.5
13...	--	--	--	--	--	--	--	610	--	15.0
14...	395	.54	5550	190	45	37	1.7	610	8.2	14.0
JUNE										
11...	402	.55	2340	200	32	36	1.7	620	8.1	16.5
JULY										
29...	622	.85	369	310	32	38	2.3	940	8.0	25.5
AUG.										
13...	787	1.07	446	340	29	44	3.1	1160	8.4	21.5
SEP.										
15...	625	.85	304	270	11	43	2.6	945	8.1	15.0

DATE	COLOR (PLAT- INUM- COBALT UNITS)	CYANIDE (CN) (MG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BERYL- LIUM (BE) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)
OCT.										
15...	30	--	--	--	--	--	--	--	--	--
NOV.										
18...	20	--	--	--	--	--	--	--	--	--
DEC.										
17...	20	--	--	--	--	--	--	--	--	--
JAN.										
20...	30	--	--	--	--	--	--	--	--	--
FEB.										
18...	30	--	--	--	--	--	--	--	--	--
MAR.										
18...	30	--	--	--	--	--	--	--	--	--
APR.										
17...	65	.00	2	<100	<10	120	0	0	0	3
MAY										
02...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
14...	45	--	--	--	--	--	--	--	--	--
JUNE										
11...	45	--	--	--	--	--	--	--	--	--
JULY										
29...	20	--	--	--	--	--	--	--	--	--
AUG.										
13...	40	--	--	--	--	--	--	--	--	--
SEP.										
15...	31	--	--	--	--	--	--	--	--	--

DATE	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
APR.										
17...	5	20	.0	0	3	0	0	220	.0	10

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	1140	1130	1360	1330	1120	1120	1120	1110	1220	1200
2	---	---	1130	1110	1400	1360	1110	1110	1130	1120	1220	1210
3	---	---	1110	1100	1420	1400	1110	1110	1140	1130	1220	1210
4	---	---	1120	1100	1460	1420	1120	1110	1150	1150	1220	1200
5	---	---	1120	1110	1480	1460	1120	1110	1160	1150	1210	1200
6	---	---	1100	1100	1570	1480	1120	1120	1160	1160	1210	1200
7	---	---	1110	1100	1590	1560	1120	1120	1160	1140	1210	1200
8	---	---	1110	1110	1610	1590	1130	1120	1140	1140	1200	1200
9	---	---	1110	1110	1640	1610	1120	1120	1160	1140	1210	1210
10	---	---	1110	1110	1640	1330	1120	1120	1180	1160	1210	1210
11	---	---	1110	1110	1320	1300	1120	1110	1190	1180	1240	1220
12	---	---	1110	1110	1300	1280	1110	1110	1190	1180	1260	1240
13	---	---	1110	1110	1270	1260	1110	1100	1190	1190	1270	1260
14	---	---	1110	1110	1270	1260	1100	1100	1190	1190	1340	1270
15	---	---	1110	1110	1260	1240	1100	1080	1200	1200	1350	1290
16	---	---	1120	1110	1240	1230	1080	1070	1200	1190	1300	1240
17	---	---	1120	1110	1230	1230	1070	1070	1190	1190	1230	1100
18	---	---	1120	1120	1230	1220	1070	1060	1190	1180	1100	1030
19	---	---	1140	1120	1230	1230	1070	1060	1180	1170	1030	940
20	---	---	1140	1140	1230	1220	1070	1070	1170	1170	975	928
21	---	---	1160	1140	1210	1200	1080	1070	1180	1170	998	944
22	---	---	1180	1160	1200	1200	1080	1070	1170	1160	1030	976
23	---	---	1200	1180	1200	1190	1070	1070	1170	1170	986	973
24	1140	---	1220	1200	1200	1200	1080	1070	1180	1170	994	967
25	1170	1150	1220	1220	1190	1180	1080	1080	1200	1180	985	965
26	1180	1170	1260	1220	1180	1180	1080	1080	1210	1200	1020	975
27	1170	1170	1280	1260	1170	1170	1080	1070	1210	1200	1040	1010
28	1170	1170	1280	1280	1170	1160	1080	1070	1220	1210	1090	1040
29	1170	1170	1300	1290	1160	1160	1080	1080	---	---	1100	1090
30	1170	1150	1330	1280	1150	1140	1090	1090	---	---	1090	1090
31	1150	1140	---	---	1140	1130	1110	1100	---	---	1090	1080
MONTH	---	---	1330	1100	1640	1130	1130	1060	1220	1110	1350	928

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1100	1080	528	479	528	525	720	702	916	895	949	939
2	1120	1100	545	528	531	526	722	717	963	924	941	916
3	1110	1110	558	546	532	527	734	721	971	962	924	914
4	1110	1110	583	557	542	527	755	730	971	932	935	922
5	1110	1100	618	585	549	544	759	749	979	968	939	936
6	1130	1110	659	621	556	549	761	751	978	956	938	932
7	1130	1120	687	656	566	555	753	746	978	943	933	895
8	1130	1130	702	689	576	567	750	742	1020	986	916	888
9	1130	1130	706	699	585	576	748	739	1020	1020	927	915
10	1130	1120	701	674	---	586	741	737	1060	1020	932	925
11	1110	1090	673	647	631	591	752	738	1120	1070	927	924
12	1080	985	649	624	730	631	788	756	1190	1120	929	922
13	973	857	626	612	710	693	827	793	1190	1110	933	924
14	852	813	617	610	743	705	853	829	1110	1060	944	932
15	808	675	611	600	762	745	850	847	1130	1110	949	943
16	675	552	604	599	779	758	851	846	1130	1090	943	937
17	560	504	602	596	760	720	848	837	1070	947	937	928
18	516	481	601	590	720	691	842	831	945	896	925	906
19	538	514	597	589	691	663	841	825	900	894	906	890
20	583	539	589	581	665	652	870	838	899	864	887	876
21	588	542	582	576	656	642	866	853	891	866	898	882
22	540	523	576	570	662	638	920	863	908	890	918	899
23	538	521	570	559	692	666	933	919	925	913	916	861
24	535	529	569	555	689	680	929	918	933	924	886	843
25	542	531	565	554	684	645	923	917	938	928	911	889
26	559	539	559	552	647	643	922	903	936	924	917	903
27	589	557	560	548	651	645	915	904	941	928	903	898
28	547	525	547	544	655	651	931	912	945	933	912	903
29	546	483	545	539	679	657	944	927	944	867	912	909
30	480	465	538	529	700	681	950	930	896	802	913	910
31	---	---	530	529	---	---	932	903	925	862	---	---
MONTH	1130	465	706	479	779	525	950	702	1190	802	949	843

RED RIVER OF THE NORTH BASIN

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, N. DAK.--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	5.0	4.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	---	---	4.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	---	---	3.5	2.5	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0
4	---	---	3.0	2.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
5	---	---	2.5	1.5	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
6	---	---	2.5	1.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	---	---	3.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	---	---	3.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	---	---	3.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	---	---	3.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	---	---	3.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	---	---	2.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	---	---	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	---	---	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	---	---	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	---	---	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	---	---	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	---	---	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	---	---	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	---	---	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	---	---	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	---	---	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	---	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	---	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	---	---	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	5.0	4.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	5.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	5.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	5.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0	---	---	0.0	0.0
30	6.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0	---	---	0.0	0.0
31	6.5	5.0	---	---	0.0	0.0	0.0	0.0	---	---	0.0	0.0
MONTH	---	---	5.0	0.0	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	0.0	0.0	6.0	5.5	16.0	15.0	24.0	23.0	24.5	23.5	19.0	18.0
2	0.0	0.0	7.0	6.0	16.5	15.5	24.0	22.5	23.5	22.0	18.5	17.5
3	0.0	0.0	8.0	6.5	16.5	16.0	24.0	23.0	23.0	22.5	17.5	16.5
4	0.0	0.0	9.0	7.5	17.0	16.5	24.5	23.0	23.5	22.0	17.5	16.5
5	0.0	0.0	10.5	8.5	17.0	16.5	25.0	24.0	22.5	21.5	17.0	16.0
6	0.0	0.0	11.5	9.5	17.5	16.5	25.5	24.0	22.0	21.0	16.5	16.0
7	0.0	0.0	12.5	10.5	18.0	17.0	26.0	24.5	23.0	21.5	16.0	15.5
8	0.0	0.0	11.0	9.5	18.0	18.0	25.0	24.0	23.0	21.5	16.0	15.0
9	0.0	0.0	12.5	10.5	18.0	16.5	24.5	24.0	23.0	21.5	16.0	15.0
10	0.0	0.0	13.0	11.5	---	---	24.0	23.0	22.0	21.0	16.5	16.0
11	0.0	0.0	14.5	12.5	---	---	23.5	22.5	22.0	21.0	16.0	15.0
12	0.0	0.0	15.0	13.0	18.0	17.0	23.0	21.5	21.5	21.5	14.5	13.5
13	0.0	0.0	14.5	13.5	18.5	17.5	23.0	22.0	21.5	20.0	14.5	13.5
14	0.0	0.0	14.5	13.5	18.5	18.0	24.0	22.5	21.0	20.5	15.0	13.5
15	0.0	0.0	16.5	13.5	18.5	18.5	25.0	23.5	21.0	20.0	15.5	14.5
16	0.0	0.0	16.5	14.5	19.0	18.0	26.0	24.5	21.0	19.5	16.0	14.5
17	0.0	0.0	17.0	16.0	19.0	18.0	26.0	24.5	19.5	18.5	16.5	16.0
18	0.0	0.0	17.0	16.0	19.5	19.0	25.0	24.0	19.0	17.5	16.0	13.5
19	0.0	0.0	17.0	16.5	19.5	19.0	24.0	23.5	18.5	17.0	13.0	12.0
20	0.0	0.0	16.5	15.5	20.0	18.5	24.0	22.5	18.0	17.5	11.5	10.5
21	0.0	0.0	15.5	14.5	20.0	19.5	24.0	22.5	18.0	17.0	11.0	10.0
22	0.0	0.0	14.5	13.5	20.0	19.5	24.0	23.5	18.5	17.5	12.0	11.0
23	2.0	0.0	13.5	13.5	21.0	20.0	23.5	22.5	19.5	18.5	12.5	11.0
24	3.0	1.5	15.0	13.0	22.0	20.5	23.0	21.5	19.5	19.0	12.5	11.5
25	4.0	3.0	14.5	13.5	23.0	22.0	23.5	22.0	19.0	17.5	13.0	12.0
26	4.5	4.0	14.5	13.5	23.5	23.0	24.0	23.0	17.5	16.5	13.0	12.5
27	5.0	4.5	15.0	13.5	23.0	22.5	24.0	22.5	18.0	16.5	13.0	12.5
28	5.5	5.0	16.0	14.5	23.5	23.0	24.5	23.0	19.5	17.5	13.0	12.5
29	5.5	5.0	16.0	15.0	23.5	22.5	25.5	24.0	19.0	18.0	12.5	12.0
30	5.5	5.0	15.0	14.5	24.0	22.5	26.0	24.5	19.0	16.5	12.0	11.0
31	---	---	15.5	14.5	---	---	25.5	24.5	19.0	18.5	---	---
MONTH	5.5	0.0	17.0	5.5	24.0	15.0	26.0	21.5	24.5	16.5	19.0	10.0

05120500 WINTERING RIVER NEAR KARLSRUHE, N. DAK.

LOCATION.--Lat 48°10'14", long 100°32'20", on line between secs.10 and 11, T.154 N., R.77 W., McHenry County, 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 mi² (1,826 km²), of which about 420 mi² (1,090 km²) is probably noncontributing.

PERIOD OF RECORD.--Chemical analyses: September 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)
OCT.										
07...	1430	2.4	--	--	--	--	--	--	--	--
NOV.										
06...	1530	4.6	10	150	80	65	29	49	3.5	370
DEC.										
02...	1710	1.9	13	100	60	95	27	56	3.4	460
JAN.										
15...	1310	1.0	21	20	300	100	12	40	3.6	391
FEB.										
06...	1645	1.7	20	20	580	74	23	31	2.5	368
MAR.										
12...	1330	2.0	18	210	540	66	26	33	2.4	350
19...	1355	4.0	--	--	--	--	--	--	--	--
APR.										
15...	1820	17	--	--	--	--	--	--	--	--
19...	1330	E44	--	--	--	--	--	--	--	--
25...	1450	521	--	--	--	--	--	--	--	--
30...	1540	314	--	--	--	--	--	--	--	--
MAY										
14...	1300	195	6.8	420	80	33	21	100	7.4	314
20...	1830	67	--	--	--	--	--	--	--	--
JUNE										
18...	2000	36	8.0	270	80	43	37	130	7.2	504
JULY										
15...	1200	23	8.8	380	80	37	33	200	6.8	625
AUG.										
14...	1500	5.7	9.0	400	80	49	31	160	5.0	569
SEP.										
11...	1445	4.9	9.8	150	60	63	23	56	5.5	366

DATE	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO. PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT.									
07...	--	--	--	--	--	--	--	--	--
NOV.									
06...	0	304	69	10	.5	.23	.01	411	.56
DEC.									
02...	0	377	74	12	.4	.23	.01	528	.72
JAN.									
15...	0	321	62	11	.2	.23	.01	470	.64
FEB.									
06...	0	302	47	7.8	.1	.23	.01	413	.56
MAR.									
12...	0	287	47	7.1	.2	.23	.01	368	.50
19...	--	--	--	--	--	--	--	--	--
APR.									
15...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
MAY									
14...	0	258	130	10	.1	.56	.06	496	.67
20...	--	--	--	--	--	--	--	--	--
JUNE									
18...	0	413	120	13	.1	.75	.22	638	.87
JULY									
15...	0	513	140	15	.1	.56	.33	796	1.08
AUG.									
14...	0	467	99	21	.1	.50	.16	650	.88
SEP.									
11...	0	300	59	9.1	.1	.20	.04	450	.61

E - Estimated.

RED RIVER OF THE NORTH BASIN

05120500 WINTERING RIVER NEAR KARLSRUHE, N. DAK.--Continued

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
OCT. 07...	--	--	--	--	--	660	--	6.0	--
NOV. 06...	5.11	280	0	27	1.3	690	8.1	3.5	280
DEC. 02...	2.71	350	0	26	1.3	825	7.9	.0	80
JAN. 15...	1.27	300	0	22	1.0	670	7.3	.0	280
FEB. 06...	1.90	280	0	19	.8	645	7.6	.0	350
MAR. 12...	1.99	270	0	21	.9	625	7.7	.0	350
19...	--	--	--	--	--	380	--	.0	--
APR. 15...	--	--	--	--	--	290	--	1.5	--
19...	--	--	--	--	--	225	--	.0	--
25...	--	--	--	--	--	375	--	8.5	--
30...	--	--	--	--	--	370	--	4.5	--
MAY 14...	261	170	0	55	3.3	740	7.7	13.5	630
20...	--	--	--	--	--	810	--	--	--
JUNE 18...	62.0	260	0	51	3.5	960	7.9	22.0	240
JULY 15...	49.9	230	0	65	5.8	1200	8.0	14.5	400
AUG. 14...	10.1	250	0	58	4.4	--	--	--	200
SEP. 11...	5.95	250	0	32	1.5	675	8.1	14.0	40

05123400 WILLOW CREEK NEAR WILLOW CITY, N. DAK.

LOCATION.--Lat 48°35'20", long 100°26'30", in NE¼NW¼ sec.23, T.159 N., R.76 W., McHenry County, 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 mi² (3,000 km²), approximately, of which about 430 mi² (1,110 km²) is probably noncontributing.

PERIOD OF RECORD.--Chemical analyses: September 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SiO ₂) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO ₃) (MG/L)
OCT. 31...	1410	10	1.5	80	20	55	54	41	11	350
DEC. 05...	1530	.80	1.4	60	80	91	88	83	16	550
JAN. 09...	1600	.15	11	40	1600	110	96	100	14	632
APR. 16...	1400	1490	--	--	--	--	--	--	--	--
19...	1635	871	--	--	--	--	--	--	--	--
24...	1350	706	--	--	--	--	--	--	--	--
MAY 07...	1515	817	--	--	--	--	--	--	--	--
JUNE 06...	1435	21	6.7	60	40	52	46	41	9.6	340
JULY 10...	1905	4.1	7.9	100	10	56	61	77	8.8	441
AUG. 06...	1530	8.3	9.0	190	10	47	47	33	9.9	337
SEP. 04...	1445	9.4	4.3	60	10	81	26	23	11	327

DATE	CARBONATE (CO ₃) (MG/L)	ALKALINITY AS CaCO ₃ (MG/L)	DIS-SOLVED SULFATE (SO ₄) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHOPHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)
OCT. 31...	4	294	140	16	.4	.34	.10	494	.67
DEC. 05...	0	451	290	28	.4	.23	.05	942	1.28
JAN. 09...	0	518	340	38	.4	.79	.09	1080	1.47
APR. 16...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
MAY 07...	--	--	--	--	--	--	--	--	--
JUNE 06...	0	279	130	8.4	.1	.23	--	488	.66
JULY 10...	0	362	170	15	.1	.56	.11	678	.92
AUG. 06...	0	276	100	8.9	.1	.56	.13	454	.62
SEP. 04...	0	268	88	7.7	.1	.47	.03	436	.59

DATE	DIS-SOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DIS-SOLVED BORON (B) (UG/L)
OCT. 31...	13.3	360	66	19	.9	795	8.3	6.0	80
DEC. 05...	2.03	590	140	23	1.5	1300	8.2	.0	200
JAN. 09...	.44	670	150	24	1.7	1440	7.5	.0	310
APR. 16...	--	--	--	--	--	475	--	2.5	--
19...	--	--	--	--	--	600	--	3.0	--
24...	--	--	--	--	--	700	--	9.5	--
MAY 07...	--	--	--	--	--	750	--	12.5	--
JUNE 06...	28.3	320	40	21	1.0	750	8.0	17.5	0
JULY 10...	7.51	390	29	29	1.7	989	8.0	23.0	40
AUG. 06...	10.2	310	34	18	.8	755	8.4	24.5	80
SEP. 04...	11.1	310	41	13	.6	640	8.5	18.5	120

RED RIVER OF THE NORTH BASIN

05123760 DEEP RIVER BELOW CUTBANK CREEK NEAR UPHAM, N. DAK.

LOCATION.--Lat 48°36'14", long 100°47'41", in SW¼SW¼SW¼ sec.7, T.159 N., R.78 W., McHenry County, at bridge 0.5 mi (0.8 km) below Cutbank Creek and about 3.5 mi (5.6 km) northwest of Upham at bridge on county highway.

PERIOD OF RECORD.--Chemical analyses: October 1974 to current year.

Specific conductance: October 1974 to current year.

Water temperatures: October 1974 to current year.

EXTREMES.--Current year:

Specific conductance: Maximum daily, 1,610 micromhos Oct. 30-31; minimum daily, 450 micromhos, Apr. 24.

Water temperatures: Maximum daily, 28.0°C July 6; minimum daily 2.0°C Apr. 19.

REMARKS.--No specific conductance or temperature records available from Nov. 9 - Apr. 17.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
MAY									
07...	1840	E1100	13	40	10	43	33	44	12
JUNE									
06...	0850	E90	8.1	--	--	55	55	73	17
JULY									
22...	1200	E40	16	--	--	62	63	99	17
AUG.									
13...	1245	E12	13	70	20	59	66	100	21
SEP.									
10...	1800	6.0	13	--	--	56	63	110	25

DATE	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LITY AS CaCO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)
MAY									
07...	196	0	161	150	24	.1	437	.59	--
JUNE									
06...	361	--	296	180	32	.1	660	.90	160
JULY									
22...	453	0	372	190	48	.2	770	1.05	--
AUG.									
13...	464	0	381	190	46	.3	773	1.05	--
SEP.									
10...	435	13	378	210	43	.1	837	1.14	13.6

DATE	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
MAY								
07...	240	83	27	1.2	670	7.8	11.5	90
JUNE								
06...	360	68	29	1.7	960	--	16.0	100
JULY								
22...	410	43	33	2.1	1130	8.3	23.5	150
AUG.								
13...	420	39	33	2.1	1100	8.1	21.5	140
SEP.								
10...	400	21	36	2.4	1200	8.5	16.5	70

E - Estimated.

RED RVER OF THE NORTH BASIN

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05123760 DEEP RIVER BELOW CUTBANK CREEK NEAR UPHAM, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1560	1600					---	504	942	1100	1030	1160
2	1560	1580					---	480	972	1110	1040	1200
3	1510	1580					---	478	963	1130	1060	1170
4	1490	1570					---	511	1000	1140	1080	1160
5	1490	1570					---	574	991	1140	1110	1180
6	1490	1570					---	635	1000	1140	1020	1170
7	1480	1570					---	667	965	1150	1020	1190
8	1480	1580					---	657	1010	1150	1020	1180
9	1500	---					---	638	1010	1160	1120	1180
10	1470	---					---	638	973	1160	1120	1180
11	1460	---					---	650	960	1180	1120	1180
12	1500	---					---	659	980	1180	1140	1180
13	1470	---					---	681	975	1180	1150	1180
14	1480	---					---	690	995	1180	1150	1190
15	1520	---					---	708	967	1190	1160	1200
16	1480	---					---	730	987	1180	1160	1200
17	1480	---					---	758	973	1170	1160	1200
18	1480	---					---	622	987	1140	1160	1180
19	1470	---					---	772	992	1100	1160	1140
20	1500	---					---	646	803	1030	1120	1150
21	1520	---					---	646	822	1020	1110	1150
22	1530	---					---	515	802	1030	1140	1150
23	1530	---					---	450	832	1050	1140	1150
24	1570	---					---	455	826	1040	1130	1170
25	1570	---					---	460	845	1050	1120	1170
26	1570	---					---	477	855	1060	1120	1170
27	1600	---					---	477	855	1080	1150	1160
28	1600	---					---	552	872	1100	1140	1160
29	1600	---					---	537	876	1120	1140	1160
30	1610	---					---	536	895	1130	1150	1170
31	1610	---					---	907	---	1120	1220	---
MONTH	1520	---					---	723	1010	1140	1150	1170

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	5.0					---	8.0	14.0	23.5	22.0	19.0
2	5.5	4.0					---	7.0	16.0	23.0	20.0	16.5
3	6.5	4.0					---	10.0	16.5	23.0	22.0	18.0
4	7.5	4.0					---	9.5	17.0	24.0	22.0	17.0
5	6.5	3.5					---	12.0	15.0	25.0	23.0	17.0
6	5.0	5.5					---	13.5	15.5	28.0	23.5	15.0
7	4.5	6.0					---	11.0	17.0	27.0	24.0	14.0
8	8.5	5.5					---	9.0	18.0	24.0	21.0	14.0
9	8.0	---					---	15.0	16.0	22.5	21.0	14.0
10	9.5	---					---	17.0	14.5	21.5	20.0	15.5
11	9.5	---					---	14.0	15.0	21.0	21.5	13.0
12	9.0	---					---	15.0	18.0	21.0	21.0	12.0
13	7.5	---					---	17.0	19.0	22.0	19.5	12.0
14	6.0	---					---	15.0	19.5	24.0	20.0	14.0
15	7.5	---					---	14.0	18.5	25.0	20.0	14.0
16	11.5	---					---	17.0	19.0	25.5	19.5	18.0
17	10.0	---					---	18.0	19.0	25.0	17.0	17.0
18	12.0	---					---	3.5	17.0	19.5	23.0	14.5
19	10.5	---					---	2.0	17.0	20.0	22.0	10.0
20	10.0	---					---	4.0	15.0	19.0	23.0	9.0
21	9.5	---					---	3.0	12.0	20.5	22.0	8.0
22	7.0	---					---	5.5	13.0	20.5	21.0	9.0
23	8.0	---					---	4.5	12.5	21.0	23.0	10.0
24	8.5	---					---	5.0	12.5	23.0	25.0	11.0
25	7.0	---					---	8.0	14.0	24.0	26.5	12.0
26	8.5	---					---	7.0	14.0	24.0	23.0	13.0
27	9.0	---					---	6.5	14.0	20.5	23.0	13.0
28	8.0	---					---	7.0	15.0	22.0	24.0	13.0
29	7.5	---					---	7.5	16.0	22.5	26.0	12.0
30	10.0	---					---	6.0	14.0	23.0	25.5	9.0
31	9.0	---					---	13.0	---	25.0	19.5	---
MONTH	8.0	---					---	13.5	19.0	24.0	19.5	13.5

RED RIVER OF THE NORTH BASIN

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, N. DAK.
(Radiochemical station)

LOCATION.--Lat 48°59'47", long 100°57'29", in SW4SE4 sec.30, T.164 N., R.79 W., Bottineau County, at gaging station, 1,200 ft (366 m) upstream from second crossing of international boundary, 1 mi (1.6 km) downstream from Fish and Wildlife Service Dam 357, 7 mi (11 km) northeast of Westhope, 11 mi (17.7 km) downstream from Boundary Creek, and at mile 154.5 (kilometre 248.6).

DRAINAGE AREA.--16,900 mi² (43,800 km²), approximately, of which 10,300 mi² (26,700 km²) is probably noncontributing.

PERIOD OF RECORD.--Chemical analyses: June 1954 to September 1964, October 1966 to current year.

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.

EXTREMES.--Period of record:

Specific conductance (1956-64, 1966-68, 1973 to current year): Maximum observed, 4,750 micromhos Feb. 21, 1961; minimum observed, 232 micromhos Apr. 18, 1957.
Water temperature (1959-64, 1966-68, 1973 to current year): Maximum recorded, 28.5°C July 4, 1975, minimum, freezing point on many days during winter months.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)
OCT.												
01...	1630	E55	--	--	--	--	--	--	--	--	--	--
17...	1315	25	.8	--	--	--	--	--	--	45	35	90
30...	1330	E260	--	--	--	--	--	--	--	--	--	--
NOV.												
20...	1400	260	7.8	--	--	--	--	--	--	63	44	120
DEC.												
04...	1515	23	--	--	--	--	--	--	--	--	--	--
18...	1415	20	9.6	--	140	20	70	70	0	89	65	160
JAN.												
08...	1415	22	--	--	--	--	--	--	--	--	--	--
22...	1230	22	--	--	--	--	--	--	--	--	--	--
FEB.												
20...	1550	24	18	--	--	--	--	--	--	150	100	270
MAR.												
05...	1645	E20	--	--	--	--	--	--	--	--	--	--
19...	1800	31	18	--	--	--	--	--	--	150	110	250
APR.												
15...	1230	150	13	--	--	--	--	--	--	74	45	100
22...	2025	1880	--	--	--	--	--	--	--	--	--	--
30...	1400	3300	--	--	--	--	--	--	--	--	--	--
MAY												
08...	1300	6500	--	--	--	--	--	--	--	--	--	--
13...	1600	5700	5.8	20	520	60	130	130	5	42	26	51
19...	1125	5430	--	--	--	--	--	--	--	--	--	--
29...	1045	E5000	--	--	--	--	--	--	--	--	--	--
JUNE												
12...	1230	4700	3.6	--	--	--	--	--	--	47	26	54
JULY												
09...	1140	1500	--	--	--	--	--	--	--	--	--	--
22...	1000	1400	10	--	640	30	100	100	0	54	32	70
AUG.												
05...	0915	0100	--	--	--	--	--	--	--	--	--	--
22...	1025	67	9.8	--	--	--	--	--	--	51	37	88
SEP.												
03...	1000	E70	--	--	--	--	--	--	--	--	--	--
16...	1630	22	5.3	--	--	--	--	--	--	46	36	94

E - Estimated.

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS-SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLOR- IDE (CL) (MG/L)	DIS- SOLVED FLUOR- IDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL- NITRI- GEN (N) (MG/L)
OCT.												
01...	--	--	--	--	--	--	--	.04	--	.19	3.3	3.5
17...	12	335	18	305	140	17	.2	.00	.00	.20	2.8	3.0
30...	--	--	--	--	--	--	--	.01	--	.26	2.5	2.8
NOV.												
20...	15	480	--	394	160	28	.2	.00	.00	.14	2.2	2.3
DEC.												
04...	--	--	--	--	--	--	--	.04	--	.05	2.0	2.0
18...	18	620	0	509	260	42	.3	.02	.01	.09	1.9	2.0
JAN.												
08...	--	--	--	--	--	--	--	.02	--	.24	2.3	2.5
22...	--	--	--	--	--	--	--	--	--	--	--	--
FEB.												
20...	27	1010	--	828	470	76	.4	.19	.02	.53	3.0	3.5
MAR.												
05...	--	--	--	--	--	--	--	.02	--	.05	4.3	4.3
19...	27	944	0	774	470	65	.6	.05	.19	.25	3.8	4.0
APR.												
15...	13	403	0	331	200	31	.3	.47	.35	.27	1.9	2.2
22...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	1.1	--	.23	1.9	2.1
MAY												
08...	--	--	--	--	--	--	--	--	--	--	--	--
13...	13	181	0	148	150	14	.1	.02	.01	.01	1.6	1.6
19...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	.04	--	.05	1.4	1.4
JUNE												
12...	10	237	0	194	130	11	.1	.01	.01	.02	1.6	1.6
JULY												
09...	--	--	--	--	--	--	--	.06	--	.01	1.3	1.3
22...	9.6	327	0	268	130	13	.2	.02	.01	.03	1.8	1.8
AUG.												
05...	--	--	--	--	--	--	--	.00	--	.03	1.7	1.7
22...	12	323	19	297	150	17	.2	.03	.03	.00	1.7	1.7
SEP.												
03...	--	--	--	--	--	--	--	.03	--	.00	2.6	2.6
16...	11	305	24	290	160	19	.2	.02	.02	.00	2.8	2.8

DATE	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	TOTAL FILT- RABLE RESIDUE (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)	SUS- PENDED SOLIDS (MG/L)	HARD- NESS (CA, MG) (MG/L)
OCT.											
01...	3.5	.25	--	--	531	--	.72	--	--	36	--
17...	3.0	.14	.03	.01	543	--	.74	36.7	--	46	260
30...	2.8	.17	--	--	591	--	.80	--	--	--	--
NOV.											
20...	2.3	.12	.05	.01	729	--	.99	512	--	--	340
DEC.											
04...	2.0	.14	--	--	890	--	1.21	55.3	--	--	--
18...	2.0	.14	.09	.04	984	--	1.34	53.1	--	--	490
JAN.											
08...	2.5	.23	--	--	1150	--	1.56	68.3	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
FEB.											
20...	3.7	.50	.39	.41	1640	--	2.23	106	--	--	790
MAR.											
05...	4.3	.68	--	--	1700	--	2.31	91.8	--	14	--
19...	4.1	.62	.35	.31	1610	--	2.19	135	--	--	830
APR.											
15...	2.7	.61	.32	.20	694	--	.94	281	--	--	370
22...	--	--	--	--	--	--	--	--	--	--	--
30...	3.2	.27	--	--	302	--	.41	2690	--	152	--
MAY											
08...	--	--	--	--	--	--	--	--	--	--	--
13...	1.6	.11	.04	.03	411	90	.56	6330	53	--	210
19...	--	--	--	--	--	--	--	--	--	--	--
29...	1.4	.27	--	--	471	--	.64	6360	--	32	--
JUNE											
12...	1.6	.30	.24	.15	426	--	.58	5410	--	--	220
JULY											
09...	1.4	.55	--	--	518	--	.70	2100	--	--	--
22...	1.8	.39	.28	.25	529	--	.72	2000	--	--	270
AUG.											
05...	1.7	.53	--	--	568	--	.77	153	--	24	--
22...	1.7	.36	.22	.20	568	--	.77	103	--	--	280
SEP.											
03...	2.6	.46	--	--	552	--	.75	--	--	--	--
16...	2.8	.29	.17	.08	581	--	.79	34.5	--	--	260

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	NON-CARBONATE HARDNESS (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	CHEMICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)
OCT.											
01...	--	--	--	795	9.3	6.0	--	10	11.4	96	76
17...	0	42	2.4	820	9.3	7.5	60	20	10.8	94	70
30...	--	--	--	925	8.8	7.0	--	9	10.6	91	65
NOV.											
20...	0	42	2.8	1100	8.3	1.5	50	60	13.8	104	67
DEC.											
04...	--	--	--	1320	8.3	1.5	--	8	13.3	97	61
18...	0	40	3.1	1470	8.5	1.0	40	3	11.4	83	69
JAN.											
08...	--	--	--	1600	7.7	.5	--	3	3.1	23	75
22...	--	--	--	1740	--	.0	--	--	.4	3	--
FEB.											
20...	0	42	4.2	2230	7.6	.5	70	4	2.0	15	82
MAR.											
05...	--	--	--	2370	7.6	.5	--	10	1.5	11	95
19...	53	39	3.8	2270	7.9	1.0	50	10	9.5	70	110
APR.											
15...	40	36	2.3	1120	7.4	.5	35	25	5.4	40	48
22...	--	--	--	475	--	.5	--	--	--	--	--
30...	--	--	--	485	7.7	4.5	--	30	10.5	85	43
MAY											
08...	--	--	--	575	--	11.0	--	--	--	--	--
13...	64	33	1.5	620	8.0	15.0	65	10	9.0	93	48
19...	--	--	--	620	--	15.0	--	--	--	--	--
29...	--	--	--	720	7.8	14.5	--	4	6.9	70	44
JUNE											
12...	30	33	1.6	670	8.3	17.0	40	5	7.0	76	46
JULY											
09...	--	--	--	770	8.3	22.5	--	20	5.4	--	44
22...	0	35	1.9	800	8.2	22.5	55	15	6.1	73	53
AUG.											
05...	--	--	--	840	8.5	21.0	--	3	6.4	75	49
22...	0	39	2.3	851	8.7	15.0	45	6	8.6	89	47
SEP.											
03...	--	--	--	860	8.6	14.5	--	35	7.0	71	14
16...	0	42	2.5	860	8.9	17.5	37	15	8.7	97	65

DATE	IMMEDIATE COLIFORM (COL. PER 100 ML)	FECAL COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)	CYANIDE (CN) (MG/L)	DISSOLVED ARSENIC (AS) (UG/L)	SUSPENDED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED BARIUM (BA) (UG/L)	DISSOLVED BERYL- LIUM (BE) (UG/L)	DISSOLVED BORON (B) (UG/L)	TOTAL CADMIUM (CD) (UG/L)
OCT.											
01...	190	B10	--	--	--	--	--	--	--	--	--
17...	100	E2	E2	--	--	--	--	--	--	--	--
30...	B20	B6	--	--	--	--	--	--	--	--	--
NOV.											
20...	B10	B4	<1	--	--	--	--	--	--	--	--
DEC.											
04...	B2	B2	<1	--	--	--	--	--	--	--	--
18...	--	<1	--	--	4	1	5	--	--	--	<10
JAN.											
08...	--	<1	<1	--	--	--	--	--	--	--	--
22...	B13	<1	<1	--	--	--	--	--	--	--	--
FEB.											
20...	B1	<1	<1	--	--	--	--	--	--	--	--
MAR.											
05...	--	--	--	--	--	--	--	--	--	--	--
19...	33	B2	28	--	--	--	--	--	--	--	--
APR.											
15...	B340	--	250	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
30...	3200	B30	B81	--	--	--	--	--	--	--	--
MAY											
08...	--	--	--	--	--	--	--	--	--	--	--
13...	B67	<2	<2	.00	2	0	2	0	0	110	<10
19...	--	--	--	--	--	--	--	--	--	--	--
29...	B400	--	--	--	--	--	--	--	--	--	--
JUNE											
12...	370	<1	B3400	--	--	--	--	--	--	--	--
JULY											
09...	--	--	--	--	--	--	--	--	--	--	--
22...	B50	B4	B33	--	5	1	6	--	--	--	<10
AUG.											
05...	<10	B8	B22	--	--	--	--	--	--	--	--
22...	B140	37	58	--	--	--	--	--	--	--	--
SEP.											
03...	B260	690	105	--	--	--	--	--	--	--	--
16...	18500	B14	430	--	--	--	--	--	--	--	--

E - Estimated.

B - Results based on colony count outside the acceptable range.

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	SUS- PENDE D CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	SUS- PENDE D CHRO- MIUM (CR) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL COBAL T (CO) (UG/L)	SUS- PENDE D COBAL T (CO) (UG/L)	DIS- SOLVED COBAL T (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	SUS- PENDE D COPPER (CU) (UG/L)
DEC. 18...	<9	1	<10	0	<10	<50	<48	2	<10	<9
MAY 13...	<9	1	0	0	0	<50	<50	0	50	47
JULY 22...	<10	0	0	0	0	<50	<50	0	20	20

DATE	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	SUS- PENDE D LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	SUS- PENDE D MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)
DEC. 18...	1	<100	<99	1	--	.2	.1	<.1	--
MAY 13...	3	200	200	5	30	--	.0	.2	1
JULY 22...	0	100	100	0	--	.0	.0	.0	--

DATE	DIS- SOLVED NICKEL (NI) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	SUS- PENDE D SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	SUS- PENDE D ZINC (ZN) (UG/L)
DEC. 18...	--	0	0	0	--	--	--	60	40
MAY 13...	3	0	0	0	0	180	1.7	6	2
JULY 22...	--	0	0	0	--	--	--	30	30

DATE	DIS- SOLVED ZINC (ZN) (UG/L)	DIS- SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS- PENDE D GROSS ALPHA AS U-NAT. (UG/L)	DIS- SOLVED GROSS BETA AS CS-137 (PC/L)	SUS- PENDE D GROSS BETA AS CS-137 (PC/L)	DIS- SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS- PENDE D GROSS BETA AS SR90 /Y90 (PC/L)	DIS- SOLVED RA-226 (RADON METHOD) (PC/L)	DIS- SOLVED URANIUM (U) (UG/L)
DEC. 18...	20	--	--	--	--	--	--	--	--
MAY 13...	4	1.2	3.4	4.7	3.7	3.8	2.9	.06	1.5
JULY 22...	0	--	--	--	--	--	--	--	--

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDE D SEDI- MENT (MG/L)	SUS- PENDE D SEDI- MENT DIS- CHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
OCT. 17...	1315	22	1.5	65
NOV. 20...	1400	8	5.6	60
DEC. 18...	1415	36	1.9	11
JAN. 08...	1415	31	1.8	38
22...	1230	18	1.1	44
MAY 13...	1600	17	262	92
JUNE 12...	1230	16	203	--
JULY 22...	1000	23	87	--
AUG. 22...	1025	17	3.1	92
SEP. 16...	1630	38	2.3	91

RED RIVER OF THE NORTH BASIN

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

[illegible]

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	518	517					---	---	891	876
2	---	---	571	557					---	---	892	852
3	---	---	627	590					---	---	871	862
4	---	---	669	642					---	---	866	844
5	---	---	696	621					---	---	866	851
6	---	---	661	455					---	---	861	852
7	---	---	507	485					---	---	868	856
8	---	---	595	462					---	---	860	841
9	---	---	528	490					---	---	842	818
10	---	---	559	524					---	---	833	807
11	---	---	588	553					---	---	853	834
12	---	---	611	570					---	---	860	847
13	---	---	661	593					---	---	864	851
14	---	---	632	603					---	---	864	849
15	1240	1090	626	601					---	---	862	847
16	1060	840	639	576					---	---	863	847
17	791	643	580	406					---	---	---	---
18	620	600	441	403					---	---	---	---
19	563	549	440	393					---	---	---	---
20	517	506	---	386					---	---	---	---
21	483	463	---	---					855	852	---	---
22	431	426	---	---					862	843	---	---
23	454	418	---	---					863	847	---	---
24	436	424	---	---					863	854	---	---
25	422	416	---	---					864	839	---	---
26	426	411	---	---					859	846	---	---
27	437	409	---	---					860	826	---	---
28	470	413	---	---					866	796	---	---
29	482	459	---	---					867	858	---	---
30	515	464	---	---					884	856	---	---
31	---	---	---	---					884	872	---	---
MONTH	---	---	---	---					---	---	---	---

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, N. DAK.--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	4.5	2.5	0.5	0.0						
2	---	---	2.5	1.5	0.5	0.0						
3	---	---	1.5	1.0	0.5	0.5						
4	---	---	2.0	0.5	0.5	0.5						
5	---	---	2.0	0.5	1.5	1.0						
6	---	---	2.0	0.0	2.0	1.0						
7	---	---	1.5	1.0	1.5	1.0						
8	---	---	3.0	1.5	1.5	0.5						
9	---	---	3.0	1.5	1.5	1.0						
10	---	---	2.0	1.0	2.0	1.5						
11	---	---	1.5	0.5	2.0	1.5						
12	---	---	1.0	0.5	2.0	1.5						
13	---	---	1.0	0.0	2.0	1.5						
14	---	---	1.0	0.0	1.5	1.0						
15	---	---	1.0	0.0	1.0	1.0						
16	---	---	1.0	0.0	1.0	1.0						
17	---	---	1.5	0.5	1.0	0.5						
18	---	---	1.5	0.5	1.0	0.5						
19	---	---	1.5	0.5	0.5	0.5						
20	---	---	1.5	0.0	0.5	0.5						
21	---	---	1.0	0.0	0.5	0.5						
22	---	---	0.5	0.0	0.5	0.0						
23	---	---	0.5	0.0	0.0	0.0						
24	---	---	0.5	0.0	0.5	0.0						
25	---	---	0.0	0.0	0.5	0.0						
26	---	---	1.0	0.0	0.5	0.0						
27	---	---	0.5	0.0	0.5	0.0						
28	---	---	0.0	0.0	0.5	0.0						
29	---	---	0.5	0.0	0.5	0.0						
30	8.0	7.0	0.5	0.0	0.5	0.0						
31	7.0	4.5	---	---	---	0.0						
MONTH	---	---	4.5	0.0	2.0	0.0						

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	5.5	4.5	15.5	15.0	25.5	23.5	---	---	20.0	17.5
2	---	---	6.0	5.5	17.0	15.5	26.0	24.5	---	---	17.5	15.0
3	---	---	8.0	6.0	17.0	16.5	27.0	25.0	---	---	16.5	14.5
4	---	---	9.0	7.5	17.0	16.5	28.5	26.0	---	---	17.0	15.0
5	---	---	10.0	8.5	16.5	16.0	27.5	25.5	---	---	16.5	15.0
6	---	---	11.5	9.5	17.5	16.0	25.5	24.0	---	---	16.5	15.0
7	---	---	11.5	11.0	18.0	16.5	24.0	22.5	---	---	17.0	15.0
8	---	---	12.0	11.0	17.0	17.0	23.0	21.5	---	---	16.0	14.0
9	---	---	13.0	11.5	17.0	16.0	22.5	21.0	---	---	17.0	13.5
10	---	---	14.5	12.5	16.5	15.5	23.5	21.0	---	---	16.0	14.5
11	---	---	15.0	13.5	17.5	15.5	25.0	21.5	---	---	14.0	12.5
12	---	---	16.0	14.5	19.0	17.0	26.0	23.0	---	---	13.5	11.5
13	---	---	16.0	15.5	19.0	18.0	26.5	24.5	---	---	15.0	11.5
14	---	---	15.5	15.0	19.5	18.5	28.0	25.5	---	---	17.5	13.0
15	1.0	0.5	16.0	15.0	20.0	19.0	27.0	24.5	---	---	19.0	15.0
16	1.0	0.0	16.5	15.5	20.0	19.0	25.5	23.0	---	---	18.0	14.0
17	1.0	0.0	17.5	16.5	21.0	19.5	23.5	21.5	---	---	---	---
18	0.5	0.0	18.0	17.0	20.0	18.5	25.5	21.0	---	---	---	---
19	1.0	0.0	18.0	17.0	20.5	18.5	25.5	22.5	---	---	---	---
20	1.0	0.0	16.5	16.0	21.5	20.0	24.0	23.0	---	---	---	---
21	1.5	0.0	15.5	15.0	21.5	21.0	---	---	16.5	16.0	---	---
22	1.0	0.5	15.0	14.0	23.5	21.0	---	---	18.5	15.0	---	---
23	1.0	0.5	13.5	13.5	24.0	22.0	---	---	21.0	17.5	---	---
24	1.0	0.0	14.0	13.0	24.5	23.0	---	---	20.5	18.5	---	---
25	1.0	0.5	14.0	13.5	24.0	21.5	---	---	18.5	16.5	---	---
26	1.0	0.5	14.5	13.0	23.0	21.0	---	---	18.0	15.0	---	---
27	2.5	1.0	15.0	13.5	22.5	21.0	---	---	19.0	15.5	---	---
28	3.0	2.5	16.0	14.5	24.5	22.0	---	---	21.0	17.5	---	---
29	4.5	2.5	15.5	15.0	24.5	23.0	---	---	20.5	19.5	---	---
30	5.0	4.0	15.0	14.5	24.5	23.0	---	---	21.5	19.0	---	---
31	---	---	15.0	14.0	---	---	---	---	21.5	19.5	---	---
MONTH	---	---	18.0	4.5	24.5	15.0	---	---	---	---	---	---

RED RIVER OF THE NORTH BASIN

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, N. DAK.--Continued

BIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

PHYTOPLANKTON

<u>DATE</u>	<u>TOTAL COUNT CELLS/ML</u>	<u>DOMINANT GENERA</u>	<u>PERCENT COMPOSITION</u>	<u>ALGAL GROUP</u>
741212	29,000	<u>Anacystis</u>	71	Blue-green
750122	670	<u>Anacystis</u>	94	Blue-green
750220	1,600	<u>Arthrospira</u>	59	Blue-green
750319	26,000	<u>Lyngbya</u> <u>Peridinium</u>	69 21	Blue-green Flagellate
750415	1,400	<u>Euglena</u> <u>Anacystis</u> <u>Cyclotella</u>	27 21 17	Flagellate Blue-green Diatom
750505	31,000	<u>Cyclotella</u> <u>Anacystis</u>	69 17	Diatom Blue-green
750612	39,000	<u>Crucigenia</u> <u>Anacystis</u>	40 30	Green Blue-green
750722	8,500	<u>Anacystis</u> <u>Gomphosphaeria</u>	21 18	Blue-green Blue-green
750916	66,000	<u>Anacystis</u>	61	Blue-green

PERIPHYTON

Collected by plastic strips samplers placed in the stream approximately one month prior to collection date.

<u>DATE</u>	<u>DRY WEIGHT G/M²</u>	<u>ASH WEIGHT G/M²</u>	<u>CHLOROPHYLL A G/M²</u>	<u>CHLOROPHYLL B G/M²</u>
750220	1.0	0.3	--	--
750722	4.7	1.4	5.9	2.0

MISSOURI RIVER MAIN STEM

06330000 MISSOURI RIVER NEAR WILLISTON, N. DAK.

LOCATION.--Lat 48°47'00", long 103°43'00", in NE¼NE¼ sec.6, T.153 N., R.101 W., Williams County, on Lewis & Clark Highway bridge, 5 mi (8 km) southwest of Williston, 29.3 mi (47.1 km) downstream from Yellowstone River.

DRAINAGE AREA.--164,500 mi² (426,100 km²), approximately.

PERIOD OF RECORD.--Chemical analyses: December 1950 to June 1965, July 1969 to June 1970, April 1974 to current year.

Specific conductance: December 1950 to June 1965.

Water temperatures: May 1951 to June 1965.

REMARKS.--Discharge data computed by adding the discharges of station 06329500 Yellowstone River near Sidney, Mont. to that of station 06185500 Missouri River near Culbertson, Mont. Chemical analyses of miscellaneous samples published for water year 1946.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL ALUM- INUM (AL) (UG/L)	SUS- PENDE ALUM- INUM (AL) (UG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDE MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)
OCT.												
07...	1200	E20500	8.9	--	--	--	--	--	--	--	--	54
29...	1630	E20000	11	--	--	--	--	--	--	--	--	58
DEC.												
09...	1605	E17500	8.9	700	700	0	--	--	--	--	--	65
FEB.												
12...	1345	E19000	9.6	--	--	--	--	--	--	--	--	62
APR.												
28...	1430	E32500	8.2	20000	20000	20	--	--	--	--	--	46
MAY												
20...	1300	E55000	9.4	--	--	--	--	--	--	--	--	54
JUNE												
10...	0900	E75500	8.9	13000	13000	40	23000	40	550	550	0	41
JULY												
08...	0840	112000	9.3	--	--	--	--	--	--	--	--	38
AUG.												
12...	0900	E56000	8.8	--	--	--	--	--	--	--	--	48
SEP.												
09...	0900	E27500	7.5	2000	2000	10	2700	10	80	70	10	52

DATE	DIS- SOLVED MAG- NE- SIUM (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)
OCT.											
07...	23	57	4.2	0	162	160	9.9	--	.05	.13	.97
29...	21	56	4.2	0	162	180	10	--	.01	.07	.25
DEC.											
09...	24	60	3.9	0	187	180	10	.6	.13	.02	.23
FEB.											
12...	25	59	4.4	0	180	190	13	--	.19	.05	.41
APR.											
28...	19	58	5.0	0	146	150	9.3	.3	.55	.07	1.7
MAY											
20...	23	59	4.5	0	157	170	9.2	.4	.36	.01	.71
JUNE											
10...	17	43	3.4	0	128	130	6.9	.4	.16	.00	1.5
JULY											
08...	13	37	3.5	0	107	100	5.6	.4	.11	.02	.79
AUG.											
12...	18	46	4.1	0	142	150	8.8	.6	.03	.01	.08
SEP.											
09...	21	55	4.0	0	153	170	7.4	.6	.1	.04	.76

DATE	TOTAL KJEL- DAHL NITRO- GEN (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	SUS- PENDE SOLIDS (MG/L)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO
OCT.											
07...	1.1	1.2	.18	--	--	.56	53	230	67	35	1.6
29...	.32	.33	.04	--	--	.59	31	230	70	34	1.6
DEC.											
09...	.25	.38	.02	--	--	.63	16	260	74	33	1.6
FEB.											
12...	.46	.65	.03	--	--	.64	22	260	78	33	1.6
APR.											
28...	1.8	2.4	.47	--	--	.52	768	190	47	39	1.8
MAY											
20...	.72	1.1	.51	.01	448	.61	--	230	73	35	1.7
JUNE											
10...	1.5	1.7	.50	.00	330	.45	--	170	45	35	1.4
JULY											
08...	.81	.92	.28	.00	277	.38	--	150	42	35	1.3
AUG.											
12...	.09	.12	.11	.00	383	.52	--	190	52	33	1.4
SEP.											
09...	.76	.80	.12	.00	408	.55	--	220	64	35	1.6

E - Estimated.

MISSOURI RIVER MAIN STEM

06330000 MISSOURI RIVER NEAR WILLISTON, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	DISSOLVED ORGANIC CARBON (C) (MG/L)	SUSPENDED ORGANIC CARBON (C) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	SUSPENDED ARSENIC (AS) (UG/L)
OCT.											
07...	650	8.1	9.0	--	10.6	98	2.1	--	--	--	--
29...	690	8.2	9.5	--	10.4	97	1.0	--	--	--	--
DEC.											
09...	730	8.0	1.0	--	12.8	96	2.3	--	--	--	--
FEB.											
12...	720	8.1	.0	--	12.0	88	1.8	--	--	--	--
APR.											
28...	790	8.1	6.5	--	9.2	80	--	--	--	--	--
MAY											
20...	700	8.2	13.0	2	8.2	83	2.1	15	3.7	--	--
JUNE											
10...	520	8.1	14.0	300	8.8	90	2.4	24	3.0	16	13
JULY											
08...	435	8.0	20.0	240	7.0	81	1.5	8.6	2.1	--	--
AUG.											
12...	560	8.3	19.5	55	8.2	95	2.5	29	1.5	--	--
SEP.											
09...	660	8.2	15.0	35	8.4	88	3.0	37	<10	5	2

DATE	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	SUSPENDED BARIUM (BA) (UG/L)	DISSOLVED BARIUM (BA) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	SUSPENDED BERYLLIUM (BE) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)	DISSOLVED BORON (B) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	SUSPENDED CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)
DEC.											
09...	--	--	--	--	--	--	--	180	--	--	--
APR.											
28...	--	--	--	--	--	--	--	200	--	--	--
JUNE											
10...	3	200	200	0	0	0	0	--	<10	<10	0
SEP.											
09...	3	<100	--	--	<10	0	<10	--	<10	<10	0

DATE	TOTAL CHROMIUM (CR) (UG/L)	SUSPENDED CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	SUSPENDED COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	SUSPENDED LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	SUSPENDED LITHIUM (LI) (UG/L)
DEC.											
09...	--	--	--	--	0	--	100	93	7	--	--
APR.											
28...	--	--	--	30	0	33	<100	<98	2	--	--
JUNE											
10...	20	20	0	40	35	5	<100	<97	3	40	10
SEP.											
09...	20	20	0	20	17	3	100	99	1	50	0

DATE	DISSOLVED LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	SUSPENDED MERCURY (HG) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	TOTAL MOLYBDENUM (MO) (UG/L)	SUSPENDED MOLYBDENUM (MO) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	SUSPENDED NICKEL (NI) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)
DEC.										
09...	--	<.1	.0	<.1	--	--	--	--	--	--
APR.										
28...	--	.1	.0	.1	--	--	--	--	--	--
JUNE										
10...	30	.2	.0	.2	--	--	2	50	48	2
SEP.										
09...	50	1.2	.0	1.2	3	1	2	<50	<50	0

DATE	TOTAL SELENIUM (SE) (UG/L)	SUSPENDED SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	SUSPENDED STRONTIUM (SR) (UG/L)	DISSOLVED STRONTIUM (SR) (UG/L)	DISSOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	SUSPENDED ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
DEC.										
09...	1	0	1	--	--	--	--	100	0	120
APR.										
28...	6	5	1	--	--	--	--	190	160	30
JUNE										
10...	1	0	1	490	60	430	1.5	120	120	0
SEP.										
09...	1	0	1	450	0	510	1.1	30	20	10

06330000 MISSOURI RIVER NEAR WILLISTON, N. DAK.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT AND BED MATERIAL
WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM
MAY							
20...	1300	1140	39	54	75	93	100
JUNE							
10...	0900	1740	28	41	67	87	100
JULY							
08...	0840	1050	33	46	66	82	100
AUG.							
12...	0900	178	--	--	--	--	--
SEP.							
09...	0900	186	30	39	83	90	100

DATE	BED MAT. FALL DIAM. % FINER THAN .004 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM
MAY							
20...	--	--	--	--	--	--	--
JUNE							
10...	--	2	19	46	50	50	100
JULY							
08...	--	5	7	86	99	99	100
AUG.							
12...	--	--	--	--	--	--	--
SEP.							
09...	4	22	35	89	98	100	--

PHYTOPLANKTON

DATE	TOTAL COUNT CELLS/ML	DOMINANT GENERA	PERCENT COMPOSITION	ALGAL GROUP
750522	2,200	<u>Navicula</u>	44	Diatom
		<u>Nitzschia</u>	22	Diatom
750610	6,500	<u>Nitzschia</u>	27	Diatom
		<u>Navicula</u>	27	Diatom
		<u>Cymbella</u>	20	Diatom
		<u>Gomphonema</u>	20	Diatom
750708	1,000	<u>Nitzschia</u>	33	Diatom
		<u>Navicula</u>	27	Diatom
750812	17,000	<u>Cyclotella</u>	27	Diatom
		<u>Melosira</u>	59	Diatom

BEAR DEN CREEK BASIN

06332515 BEAR DEN CREEK NEAR MANDAREE, N. DAK.
(Hydrologic bench-mark station)

LOCATION.--Lat 47°47'14", long 102°46'05", in NW¼ sec.30, T.150 N., R.94 W., McKenzie County, at gaging station 0.5 mi (0.8 km) upstream from county highway culvert and 5.5 mi (8.8 km) northwest of Mandaree.

DRAINAGE AREA.--74 mi² (192 km²).

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.
Water temperatures: August 1969 to September 1970.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SI02) (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	ALKA- LITY AS CAC03 (MG/L)
OCT.												
08...	1110	.24	11	--	--	29	22	630	7.3	773	108	814
29...	1200	.21	7.9	--	--	33	22	600	7.0	862	76	834
DEC.												
09...	1230	.18	17	--	--	62	31	750	6.8	1260	--	1030
MAR.												
18...	1155	31	5.6	4700	210	16	7.7	52	12	118	0	97
APR.												
18...	1435	203	6.2	--	--	13	5.1	25	6.9	92	0	75
MAY												
06...	1235	6.6	11	--	--	62	29	250	8.4	388	0	318
JUNE												
09...	1135	8.0	7.3	--	--	24	12	350	7.2	455	0	373
JULY												
07...	1330	20	9.1	--	--	59	31	390	9.8	547	0	449
AUG.												
11...	1240	.30	8.7	--	--	47	26	450	11	471	21	421
SEP.												
08...	1205	.13	7.4	--	--	34	26	580	.6	459	210	726

DATE	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 130 C) (MG/L)	TOTAL FILT- RABLE RESIDUE (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)	HARD- NESS (CA+MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)
OCT.												
08...	700	3.1	.5	.01	.04	1910	--	2.60	1.24	--	160	0
29...	690	3.5	.8	.08	.04	1960	--	2.67	1.11	--	170	0
DEC.												
09...	830	4.8	.3	.05	.02	2350	--	3.20	1.14	--	280	0
MAR.												
18...	86	3.0	.4	.27	.38	291	--	.40	24.4	--	72	0
APR.												
18...	46	2.2	.1	.53	.50	171	--	.23	93.7	--	53	0
MAY												
06...	440	9.8	.3	.85	.17	1090	--	1.48	19.4	--	270	0
JUNE												
09...	510	4.7	.4	.58	2.7	1170	--	1.59	25.3	--	110	0
JULY												
07...	650	10	.5	.10	.35	1450	--	1.97	78.3	--	280	0
AUG.												
11...	790	6.8	.4	2.1	.22	1630	--	2.22	1.32	--	220	0
SEP.												
08...	670	4.9	.4	.01	.05	1770	--	2.41	.62	--	190	0

DATE	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOCCI (COL- ONIES PER 100 ML)	CYANIDE (CN) (MG/L)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA- TERIAL (UG/KG)
OCT.												
08...	89	21	2950	8.6	9.0	10.4	16	13	50	--	--	--
29...	88	20	2900	8.5	5.0	11.6	23	10	98	--	.00	.0
DEC.												
09...	85	19	3500	8.1	.5	11.6	87	<1	88	--	--	--
MAR.												
18...	57	2.7	450	7.6	.5	11.6	8100	8260	84300	.00	--	--
APR.												
18...	47	1.5	250	8.4	.5	11.6	850	827	8110	--	--	--
MAY												
06...	66	6.6	1590	8.2	8.5	9.6	E53	853	833	--	--	--
JUNE												
09...	87	15	1500	8.1	18.0	10.2	8840	8650	8320	--	--	--
JULY												
07...	75	10	2050	8.3	26.0	6.8	--	--	E15000	--	--	--
AUG.												
11...	80	13	2600	8.4	22.5	8.4	290	130	270	--	--	--
SEP.												
08...	87	18	2680	8.5	16.0	9.6	880	837	1050	--	--	--

E - Estimated.

B - Results based on colony count outside the acceptable range.

06332515 BEAR DEN CREEK NEAR MANDAREE, N. DAK.--Continued
 CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TOTAL CHLOR- DANE (UG/L)	CHLOR- DANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDD (UG/L)	DDD IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)	DI- ELDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ENDRIN (UG/L)
OCT. 08...	--	--	--	--	--	--	--	--	--	--	--	--
29...	.0	0	.00	.0	.00	.0	.00	.0	.00	.00	.0	.00

DATE	ENDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR (UG/L)	HEPTA- CHLOR IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	HEPTA- CHLOR EPOXIDE IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL PCB (UG/L)	PCB IN BOTTOM MA- TERIAL (UG/KG)
OCT. 08...	--	--	--	--	--	--	--	--	--	--	--	--
29...	.0	.00	.0	.00	.0	.00	.0	.00	.00	.00	.0	0

DATE	TOTAL TOX- APHENE (UG/L)	TOX- APHENE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT. 29...	0	0	.00	.00	.00	--	--	--	--	--	--	--
MAR. 18...	--	--	--	--	--	2	<100	<10	25	10	<100	.2

DATE	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS- PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS- SOLVED GROSS BETA AS CS-137 (PC/L)	SUS- PENDED GROSS BETA AS CS-137 (PC/L)	DIS- SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS- PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS- SOLVED RA-226 (RADON METHOD) (PC/L)	DIS- SOLVED NATURAL URANIUM (U) (UG/L)
OCT. 29...	--	--	--	--	--	--	--	--	--	--	--
MAR. 18...	1	10	50	--	--	--	--	--	--	--	--

SUSPENDED SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT. 08...	1110	53	.03	--	--	--
29...	1200	39	.02	--	--	--
DEC. 09...	1230	45	.02	--	--	--
MAR. 18...	1155	354	30	--	--	--
APR. 18...	1435	1970	1080	--	--	--
MAY 06...	1235	174	3.1	--	--	--
JUNE 09...	1135	11300	244	75	100	--
JULY 07...	1330	950	51	94	98	100
AUG. 11...	1240	161	.13	--	--	--
SEP. 08...	1205	105	.04	--	--	--

LITTLE MISSOURI RIVER BASIN

06335000 LITTLE BEAVER CREEK NEAR MARMARTH, N. DAK.

LOCATION.--Lat 46°16'29", long 103°58'33", in NE¼ sec.7, T.132 N., R.106 W., Bowman County, on right bank 150 ft (46 m) downstream from concreted ford, 0.8 mi (1.3 km) downstream from Corral Creek, 3 mi (5 km) southwest of Marmarth, and 5 mi (8 km) upstream from mouth.

DRAINAGE AREA.--587 mi² (1,520 km²), approximately.

PERIOD OF RECORD.--Chemical analyses: September 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)
OCT. 02...	1005	1.2	--	--	--	--	--	--	--	--
NOV. 05...	0955	4.5	4.2	110	20	45	31	250	4.2	430
DEC. 11...	1310	3.9	7.1	100	180	120	12	390	5.2	660
JAN. 08...	0955	1.9	6.7	530	80	83	59	400	5.2	720
FEB. 05...	1100	1.6	11	20	80	80	51	380	5.3	724
MAR. 11...	1255	7.4	9.5	230	60	37	24	130	8.0	295
APR. 15...	1215	243	2.0	130	1200	37	24	150	4.9	79
MAY 07...	1130	813	6.1	110	60	42	26	150	5.6	240
JUNE 04...	1045	38	8.4	40	40	71	54	260	5.6	452
JULY 09...	1115	20	8.6	20	20	50	38	210	5.9	439
AUG. 06...	1050	6.0	1.8	130	10	38	35	270	6.5	423
SEP. 04...	1100	2.1	2.4	120	40	41	36	310	7.8	436

DATE	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT. 02...	--	--	--	--	--	--	--	--	--
NOV. 05...	13	374	420	5.6	.6	.23	.04	981	1.33
DEC. 11...	0	541	640	8.6	.6	.23	<.01	1480	2.01
JAN. 08...	0	591	720	9.0	.6	.23	.01	1640	2.23
FEB. 05...	0	594	650	9.5	.5	.23	.01	1560	2.12
MAR. 11...	0	242	240	4.2	.2	.23	.08	623	.85
APR. 15...	0	65	440	9.3	.4	.41	.04	751	1.02
MAY 07...	0	197	320	5.0	.3	.23	.05	668	.91
JUNE 04...	7	382	580	8.6	.2	.23	--	1230	1.67
JULY 09...	0	360	360	6.4	.3	.56	.03	914	1.24
AUG. 06...	0	347	490	7.9	.2	.56	.01	1080	1.47
SEP. 04...	4	364	540	8.4	.3	.56	.02	1200	1.63

LITTLE MISSOURI RIVER BASIN

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06335000 LITTLE BEAVER CREEK NEAR MARMARTH, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
OCT.									
02...	--	--	--	--	--	2250	--	7.5	--
NOV.									
05...	11.9	240	0	69	7.0	1500	8.4	2.5	350
DEC.									
11...	15.6	350	0	70	9.1	2450	8.5	.5	310
JAN.									
08...	8.60	450	0	66	8.2	2600	8.2	.0	280
FEB.									
05...	6.74	410	0	67	8.2	2200	8.1	.0	470
MAR.									
11...	12.4	190	0	58	4.1	924	8.0	.0	350
APR.									
15...	493	190	130	62	4.7	1000	8.1	.0	1700
MAY									
07...	1470	210	15	60	4.5	1090	8.0	9.5	470
JUNE									
04...	126	400	17	58	5.7	1850	8.6	17.0	0
JULY									
09...	49.4	280	0	61	5.5	1260	8.4	22.0	360
AUG.									
06...	17.5	240	0	70	7.6	1660	8.6	21.0	80
SEP.									
04...	6.81	250	0	72	8.5	1800	8.7	16.5	80

LITTLE MISSOURI RIVER BASIN

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, N. DAK.
(National Water-Quality Accounting Network Station)

LOCATION.--Lat 47°35'25", long 103°15'05", in NW¼SE¼SE¼ sec.35, T.148 N., R.99 W., McKenzie County, at bridge on U.S. Highway 85, 17 mi (27 km) upstream from Cherry Creek, and 17.5 mi (28.2 km) south of Watford City.

DRAINAGE AREA.--8,310 mi² (21,520 km²), approximately.

PERIOD OF RECORD.--Specific conductance: July 1972 to March 1974 (weekly), April 1974 to current year.

Water temperatures: July 1972 to March 1974 (weekly), April 1974 to current year.

Sediment records: October 1948 to current year.

EXTREMES.--Current year:

Specific conductance: Maximum daily, 4,400 micromhos Jan. 7-9; minimum daily, 565 micromhos Mar. 18.

Water temperatures: Maximum daily, 30.0°C June 5; minimum daily, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 41,200 mg/l Apr. 29; minimum daily 0 mg/l Jan. 12 - Feb. 19.

Sediment discharge: Maximum daily 1,530,000 tons May 11; minimum daily 0 ton Jan. 12 - Feb. 19.

Period of record:

Specific conductance: Maximum daily, 4,400 micromhos Jan. 7-9, 1975; minimum daily 535 micromhos, Jan. 18, 1974.

Water temperatures: Maximum daily, 30.0°C June 5, 1975; minimum daily, freezing point on many days during winter months.

Sediment concentrations (1972 to current year): Maximum daily, 41,000 mg/l Sept. 4, 1973; minimum daily,

0 mg/l Jan. 12 - Feb. 19, 1975.

Sediment discharge (1972 to current year): Maximum daily, 1,530,000 tons May 11, 1975; minimum daily, 0 ton, Jan. 12 - Feb. 19, 1975.

REMARKS.--Minimum daily temperatures for current year estimated.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDE MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
OCT.												
09...	1125	9.4	11	--	--	--	--	--	90	58	400	13
30...	1215	17	7.1	--	--	--	--	--	88	54	430	12
DEC.												
10...	1150	5.2	14	610	40	120	70	50	140	61	710	17
APR.												
20...	1120	6100	6.1	250000	60	7200	7200	20	24	12	83	5.6
MAY												
07...	1210	2160	8.4	--	--	--	--	--	62	23	200	7.6
JUNE												
11...	1000	1850	8.5	410000	340	11000	11000	0	30	12	160	7.4
JULY												
09...	1215	814	11	--	--	--	--	--	53	25	130	7.9
AUG.												
13...	0940	72	10	--	--	--	--	--	77	33	330	12
SEP.												
10...	0930	28	9.9	680	20	50	50	0	89	50	380	13

DATE	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUD- RIDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)
OCT.											
09...	505	0	414	850	11	.4	.01	.91	.92	.04	1790
30...	476	1	392	980	13	.3	.03	.55	.58	.02	1900
DEC.											
10...	947	--	777	1300	22	.4	.17	1.0	1.2	.03	2980
APR.											
20...	127	0	104	170	4.4	.2	.69	8.9	9.6	2.2	412
MAY											
07...	307	0	252	430	6.5	.3	.63	5.1	5.7	.13	882
JUNE											
11...	176	0	144	340	5.3	.3	1.1	3.4	4.5	7.5	695
JULY											
09...	151	0	124	390	6.4	.5	.14	2.4	2.5	.71	--
AUG.											
13...	310	0	254	770	9.3	.4	.45	1.2	1.7	.53	1420
SEP.											
10...	424	0	348	830	11	.3	.03	.57	.60	.04	1600

LITTLE MISSOURI RIVER BASIN

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06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)
OCT.											
09...	2.43	45.4	460	49	64	8.1	2550	8.4	12.0	50	10.4
30...	2.58	87.2	440	50	67	8.9	2600	8.5	9.5	20	10.6
DEC.											
10...	4.05	41.8	600	0	71	13	5000	7.9	.0	10	10.2
APR.											
20...	.56	6790	110	5	61	3.5	790	8.4	4.5	7	9.0
MAY											
07...	1.20	5140	250	0	63	5.5	1410	8.2	10.5	1400	8.6
JUNE											
11...	.95	3470	120	0	72	6.2	1020	8.4	14.0	6800	9.0
JULY											
09...	.85	1370	240	110	54	3.7	1080	8.5	22.0	760	7.2
AUG.											
13...	1.93	276	330	74	68	7.9	2140	8.6	17.0	35	8.4
SEP.											
10...	2.18	121	430	80	65	8.0	2350	8.2	15.5	2	8.2

DATE	PER- CENT SATUR- ATION	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOCII (COL- ONIES PER 100 ML)	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS- PENDE D ARSE- NIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	SUS- PENDE D CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)
OCT.											
09...	98	E1	25	--	--	--	--	--	--	--	--
30...	100	B8	B20	--	--	--	--	--	--	--	--
DEC.											
10...	75	12	10	34	2	0	2	20	18	2	10
APR.											
20...	74	B50	B300	78	50	48	2	30	30	0	180
MAY											
07...	82	B150	B150	--	--	--	--	--	--	--	--
JUNE											
11...	93	B350	B270	13	240	240	1	20	19	1	250
JULY											
09...	88	410	150	--	--	--	--	--	--	--	--
AUG.											
13...	93	2000	1180	--	--	--	--	--	--	--	--
SEP.											
10...	89	B90	B80	14	1	0	2	<10	<10	0	20

DATE	SUS- PENDE D CHRO- MIUM (CR) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	SUS- PENDE D COBALT (CO) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	SUS- PENDE D COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	SUS- PENDE D LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)
DEC.											
10...	0	<10	<50	<50	0	40	32	8	100	97	3
APR.											
20...	180	0	250	250	0	330	320	14	300	300	3
JUNE											
11...	250	0	300	300	0	610	580	30	500	500	2
SEP.											
10...	20	0	100	100	0	20	14	6	<100	<99	1

DATE	TOTAL MERCURY (HG) (UG/L)	SUS- PENDE D MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	SUS- PENDE D SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	SUS- PENDE D ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
DEC.									
10...	<.1	.0	<.1	1	0	1	40	0	40
APR.									
20...	.7	.5	.2	2	1	1	1000	990	10
JUNE									
11...	.8	.7	.1	5	3	2	1900	1900	10
SEP.									
10...	--	--	.7	0	0	0	20	10	10

E - Estimated.

B - Results based on colony count outside the acceptable range.

LITTLE MISSOURI RIVER BASIN

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2400	1970	3650	3650		---	---	1080	970	1290	1820	---
2	2370	1970	3780	3800		---	---	1060	1060	1820	1930	---
3	2370	2500	3950	3630		---	---	1140	1040	1440	1840	---
4	2420	2300	3700	3910		---	---	1170	1160	1160	1910	---
5	2380	2280	4100	4400		---	---	1040	1160	1040	1940	---
6	2410	2500	4100	4280		---	---	1260	1290	1020	1940	2080
7	2380	2350	4050	4400		---	---	1260	1290	1060	1950	2100
8	2440	2360	3880	4400		---	---	1250	1140	1040	1660	2090
9	2490	2350	4010	4400		---	---	1170	1140	1080	1500	2200
10	2520	1820	3780	3620		---	---	1170	1070	1120	1780	2220
11	2510	1790	3670	3620		---	---	755	1120	1180	1920	2210
12	2470	1790	3500	3900		---	790	650	1480	1220	2020	2120
13	2440	1830	3570	3700		---	690	720	1700	1330	2110	2220
14	2520	2050	3500	3690		---	700	745	1680	1400	2040	2210
15	2750	2350	3550	---		---	660	700	1730	1470	1790	2220
16	2900	2400	3310	---		---	610	680	1550	1550	1970	2110
17	2990	2450	3600	---		995	705	705	1660	1540	1950	2290
18	2880	2450	3730	---		565	710	810	1730	1540	1900	2010
19	2790	2450	3850	---		875	615	770	1830	1690	2000	1540
20	2820	2530	3720	---		825	640	945	1780	1650	2010	1650
21	2690	2520	3620	---	1080		630	830	1780	1680	1880	1860
22	2720	2450	3620	---	1250		665	880	2020	1690	1890	1890
23	---	2440	3550	---	---		695	945	2040	1710	1920	2070
24	---	2520	3550	---	---		690	1010	2000	1780	2050	2150
25	---	2500	3630	---	---		900	1090	1570	1860	1980	2260
26	---	2700	3780	---	---		895	1160	1620	1850	2140	2160
27	---	2760	3900	---	---		930	1220	1900	1800	2080	2010
28	---	3080	3690	---	---		1050	1300	1870	1810	2070	2080
29	---	3050	3790	---	---		1040	955	2000	1840	2140	2100
30	2630	3500	3590	---	---		1070	920	1880	1820	2150	2030
31	1990	---	3700	---	---		---	980	---	1830	2070	---
MONTH	---	2400	3720	---	---	---	---	980	1540	1490	1950	2080

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	6.0				---	---	5.5	13.0	22.0	18.0	---
2	6.0	7.0				---	---	10.0	15.0	22.0	22.0	---
3	15.0	6.5				---	---	6.0	15.0	22.0	20.0	---
4	12.0	6.5				---	---	10.5	16.0	24.0	24.0	---
5	10.0	7.0				---	---	10.5	17.0	30.0	25.0	---
6	9.0	5.0				---	---	10.5	17.0	20.0	25.0	16.0
7	9.0	5.5				---	---	10.0	16.0	26.0	23.0	13.0
8	9.0	5.5				---	---	10.0	13.0	22.0	22.0	12.0
9	10.0	5.0				---	---	10.0	14.0	22.0	18.0	13.5
10	11.0	6.0				---	---	10.5	13.0	22.0	16.0	16.0
11	12.0	6.5				---	---	10.5	14.0	18.0	17.5	14.0
12	10.0	5.5				---	4.0	10.5	17.0	18.0	24.0	11.0
13	9.0	5.0				---	5.0	10.5	18.0	22.0	15.0	10.0
14	10.0	6.0				---	8.0	10.5	17.0	22.5	22.0	---
15	9.0	4.5				---	8.0	10.5	17.0	23.0	23.0	---
16	9.0	4.5				---	3.0	10.5	18.0	25.0	21.5	10.5
17	8.0	4.5				3.0	4.0	10.5	17.0	24.5	21.0	10.5
18	11.0	4.5				3.0	4.0	15.0	18.0	22.0	21.0	10.0
19	9.0	---				3.0	5.0	17.0	16.0	20.0	22.5	8.0
20	10.0	---				4.0	5.0	15.0	17.0	19.0	23.0	10.0
21	8.0	---				2.0	8.0	10.0	18.0	22.0	24.0	5.0
22	7.0	---				4.0	5.5	12.0	18.0	22.5	23.0	6.0
23	---	---				---	6.0	5.5	18.0	23.0	21.0	12.0
24	---	---				---	6.0	13.0	21.0	20.0	20.0	10.5
25	---	---				---	6.0	12.0	23.0	22.0	14.0	12.0
26	---	---				---	6.0	10.0	22.0	22.0	22.0	13.0
27	---	---				---	10.0	13.0	18.0	23.0	22.0	12.0
28	---	---				---	5.5	16.0	18.0	24.0	18.0	10.0
29	---	---				---	5.5	14.0	20.0	24.0	18.0	11.0
30	9.5	---				---	5.0	12.0	22.5	23.0	15.0	10.0
31	6.0	---				---	---	12.0	---	24.0	16.0	---
MONTH	---	---				---	---	11.0	17.0	22.5	20.5	---

LITTLE MISSOURI RIVER BASIN

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06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, N. DAK.--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	13	140	4.9	63	5760	980	18	500	24
2	12	153	5.0	69	5200	969	16	350	15
3	12	132	4.3	37	1400	140	14	300	11
4	11	96	2.9	35	1600	151	12	450	15
5	11	96	2.9	72	1400	272	10	450	12
6	11	81	2.4	77	1200	249	9.0	500	12
7	11	70	2.1	117	5100	1610	8.0	500	11
8	11	60	1.8	125	6300	2130	7.0	600	11
9	10	124	3.3	110	6000	1780	6.0	550	8.9
10	10	72	1.9	100	10100	2730	5.0	450	6.1
11	11	95	2.8	87	11200	2630	4.5	600	7.3
12	12	112	3.6	70	10400	1970	4.5	450	5.5
13	15	117	4.7	45	9500	1150	4.0	400	4.3
14	23	110	6.8	50	5200	702	4.0	400	4.3
15	23	95	5.9	45	2600	316	4.0	450	4.9
16	18	90	4.4	40	2600	281	4.0	450	4.9
17	16	81	3.5	40	8200	886	3.5	600	5.7
18	16	72	3.1	40	10300	1110	3.5	900	8.5
19	15	60	2.4	35	5900	558	3.5	800	7.6
20	12	51	1.7	30	1600	130	3.5	850	8.0
21	12	48	1.6	30	1900	154	3.5	650	6.1
22	12	45	1.5	30	2900	235	3.5	700	6.6
23	12	45	1.5	25	2700	182	3.5	1050	9.9
24	12	45	1.5	25	1400	94	3.5	1200	11
25	12	40	1.3	25	1700	115	3.0	1200	9.7
26	13	60	2.1	20	1300	70	3.0	700	5.7
27	16	100	4.3	20	1500	81	3.0	600	4.9
28	16	110	4.8	25	800	54	3.0	900	7.3
29	16	130	5.6	25	500	34	3.0	750	6.1
30	17	150	6.9	20	600	32	3.0	600	4.9
31	24	6230	813	---	---	---	3.0	500	4.1
MONTH	435	---	914.5	1532	---	21795	179.0	---	263.3

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	3.0	600	4.9	0	0	0	9.0	80	1.9
2	3.0	650	5.3	0	0	0	7.0	70	1.3
3	3.0	500	4.1	0	0	0	7.0	70	1.3
4	3.0	700	5.7	0	0	0	10	100	2.7
5	3.0	1600	13	0	0	0	20	250	13
6	3.0	1900	15	0	0	0	10	100	2.7
7	3.0	1400	11	0	0	0	10	100	2.7
8	3.0	1500	12	0	0	0	9.0	90	2.2
9	2.5	1500	10	0	0	0	8.0	80	1.7
10	2.0	1200	6.5	0	0	0	7.0	70	1.3
11	1.0	800	2.2	0	0	0	6.0	60	.97
12	0	0	0	0	0	0	5.0	50	.68
13	0	0	0	0	0	0	5.0	50	.68
14	0	0	0	0	0	0	10	150	4.1
15	0	0	0	0	0	0	30	400	32
16	0	0	0	0	0	0	50	1200	162
17	0	0	0	0	0	0	150	2700	1090
18	0	0	0	0	0	0	160	2200	950
19	0	0	0	0	0	0	200	2300	1240
20	0	0	0	1.0	10	.03	300	3600	2920
21	0	0	0	3.0	20	.16	500	3700	4990
22	0	0	0	5.0	40	.54	1740	4000	18800
23	0	0	0	4.0	30	.32	2500	5200	35100
24	0	0	0	5.0	40	.54	2300	5000	31100
25	0	0	0	10	80	2.2	2000	4000	21600
26	0	0	0	20	150	8.1	1800	3500	17000
27	0	0	0	10	80	2.2	1400	2500	9450
28	0	0	0	10	80	2.2	1000	2000	5400
29	0	0	0	---	---	---	500	1100	1490
30	0	0	0	---	---	---	400	800	864
31	0	0	0	---	---	---	600	1200	1940
MONTH	29.50	---	89.70	68.00	---	16.29	15753.0	---	154165.2

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, N. DAK.--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1200	2300	7450	3480	18600	175000	1300	1500	5260
2	1020	2000	5510	3620	14600	143000	1030	1500	4170
3	1000	1900	5130	2190	10100	59700	884	1500	3580
4	1050	2000	5670	1780	8100	38900	659	1000	1780
5	950	1900	4870	1360	6600	24200	634	800	1370
6	900	1800	4370	1210	7500	24500	578	500	780
7	900	1800	4370	2070	8100	45300	554	1500	2240
8	1000	2000	5400	3760	14200	144000	769	7210	29800
9	1100	2200	6530	5550	23800	357000	3580	37100	359000
10	1400	2800	10600	12400	40700	1360000	3240	24700	216000
11	1250	2600	8770	16600	34200	1530000	1800	14100	68500
12	1600	3500	15100	14700	23700	941000	1140	11600	35700
13	2000	2900	15700	12600	19700	670000	830	9100	20400
14	4400	5200	61800	7460	10100	203000	848	6000	13700
15	6100	7200	119000	7100	6800	130000	940	7500	19000
16	8200	6600	146000	6050	6000	98000	695	7500	14100
17	7900	23300	497000	4950	6000	80200	546	5000	7370
18	6950	19200	360000	3700	5000	50000	455	3000	3690
19	6400	14100	244000	2880	3300	25700	570	37700	58000
20	6100	17200	283000	2300	2300	14300	650	35700	62700
21	6120	20700	342000	1880	1500	7610	618	3000	5010
22	7220	28000	546000	1390	1500	5630	803	7300	15800
23	6150	27000	448000	1180	1500	4780	930	6000	15100
24	4220	17200	196000	1020	1500	4130	695	7800	14600
25	3100	17700	148000	1040	2500	7020	562	9600	14600
26	6800	29100	534000	1170	2000	6320	658	7500	13300
27	4140	28000	313000	1660	1500	6720	1270	12600	43200
28	6000	31600	512000	2100	3000	17000	749	11100	22400
29	7570	41200	842000	2390	3000	19400	1560	15200	64000
30	4220	28600	326000	2080	2500	14000	2070	12100	67600
31	---	---	---	1680	2000	9070	---	---	---
MONTH	116960	---	6017270	133350	---	6215480	31617	---	1202750

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1430	16700	64500	113	150	46	58	80	13
2	2320	21200	133000	105	130	37	58	140	22
3	3140	17700	150000	100	175	47	60	165	27
4	2120	8600	49200	93	90	23	58	110	17
5	1670	4500	20300	93	50	13	50	80	11
6	1470	3500	13900	93	100	25	31	100	8.4
7	1430	4000	15400	93	3400	2510	28	110	8.3
8	990	3000	8020	250	16400	11100	27	110	8.0
9	912	2200	5420	230	8300	6050	22	50	3.0
10	642	2000	3470	106	1400	401	27	100	7.3
11	546	1400	2060	77	500	104	24	70	4.5
12	490	800	1060	74	200	40	21	110	6.2
13	408	600	661	69	150	28	21	40	2.3
14	349	500	471	89	400	96	21	35	2.0
15	344	400	372	160	6000	2590	20	35	1.9
16	294	300	238	93	3000	753	18	110	5.3
17	288	800	622	74	800	160	20	20	1.1
18	272	900	661	74	440	88	37	40	4.0
19	240	525	340	80	220	48	137	23600	9400
20	225	480	292	77	140	29	100	2400	648
21	195	200	105	74	130	26	69	9100	1700
22	182	160	79	77	150	31	58	9100	1430
23	195	160	84	74	155	31	46	7000	869
24	235	190	121	66	240	43	35	5500	520
25	250	180	121	74	230	46	28	500	38
26	205	175	97	83	105	24	23	500	31
27	172	160	74	83	210	47	24	500	32
28	154	140	58	77	160	33	31	500	42
29	142	130	50	66	250	45	33	1500	134
30	133	115	41	63	70	12	28	700	53
31	125	130	44	60	80	13	---	---	---
MONTH	21568	---	470861	2940	---	24539	1213	---	15049.3
YEAR	325644.5		14123193						

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, N. DAK.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT AND BED MATERIAL, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT.										
09...	1125	113	2.9	--	--	--	--	--	--	96
30...	1215	81	3.7	--	--	--	--	--	--	94
DEC.										
10...	1150	183	2.6	--	--	--	--	--	--	46
APR.										
20...	1120	14600	240000	40	66	90	98	100	--	--
MAY										
07...	1210	9070	52900	46	67	90	98	100	--	--
13...	1155	13400	--	46	59	80	96	99	100	--
JUNE										
11...	1000	14000	69900	71	91	98	100	--	--	--
JULY										
09...	1215	1400	3080	70	92	94	99	100	--	--
AUG.										
13...	0940	173	34	70	94	100	--	--	--	--
SEP.										
10...	0930	128	9.7	--	--	--	--	--	--	90

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM	BED MAT. FALL DIAM. % FINER THAN 4.00 MM	BED MAT. FALL DIAM. % FINER THAN 8.00 MM	BED MAT. FALL DIAM. % FINER THAN 16.0 MM	BED MAT. FALL DIAM. % FINER THAN 32.0 MM
OCT.										
09...	2	4	80	94	97	98	98	99	100	--
MAY										
07...	11	36	61	72	83	86	91	96	100	--
JUNE										
11...	2	11	57	91	96	97	98	99	99	100
AUG.										
13...	2	7	51	78	86	88	91	95	99	100
SEP.										
10...	1	3	37	63	74	79	85	92	99	100

BIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

PHYTOPLANKTON

DATE	TOTAL COUNT CELLS/ML	DOMINANT GENERA	PERCENT COMPOSITION	ALGAL GROUP
741009	2,500	<u>Synedra</u> <u>Actinastrum</u>	66 17	Diatom Green
741010	4,000	<u>Actinastrum</u> <u>Lyngbya</u>	48 16	Green Blue-green
741210	18,000	<u>Cyclotella</u> <u>Anacystis</u>	65 16	Diatom Blue-green
750420	470	<u>Navicula</u>	100	Diatom
750507	1,100	<u>Navicula</u> <u>Cyrosigma</u>	50 50	Diatom Diatom
750709	1,400	<u>Oscillatoria</u>	85	Diatom
750813	5,900	<u>Anabaena</u>	72	Blue-green

PERIPHYTON

Collected by plastic strips samplers placed in the stream approximately one month prior to collection date.

DATE	DRY WEIGHT G/M ²	ASH WEIGHT G/M ²	CHLOROPHYLL A G/M ²	CHLOROPHYLL B G/M ²
741210	18	15	1.2	0.8
750910	7.7	6.2	.3	.1

MISSOURI RIVER MAIN STEM

06338490 MISSOURI RIVER AT GARRISON DAM, N. DAK.
(National Water-Quality Accounting Network Station)

LOCATION.--Lat 47°30'08", long 101°25'50", in S $\frac{1}{2}$ sec.31, T.147 N., R.84 W., Mercer County, downstream from dam at National Fish Hatchery's supply line from penstocks 4 and 5, in control structure of Garrison Dam, 2.5 mi (4.0 km) west of Riverdale and 14 mi (23 km) upstream from Knife River at mile 1,589.9 (kilometre 2,236.3).

DRAINAGE AREA.--181,400 mi² (469,800 km²), approximately.

PERIOD OF RECORD.--Chemical analyses: October 1971 to current year.

Specific conductance: October 1971 to current year.

Water temperatures: October 1971 to current year.

EXTREMES.--Current year:

Specific conductance: Maximum daily, 720 micromhos Nov. 1; minimum daily, 605 micromhos Mar. 7.

Water temperatures: Maximum daily, 16.0° Sept. 19; minimum daily, 0.5°C on many days during Jan. to Mar.

Period of record:

Dissolved solids (1971-73): Maximum, 487 mg/l Mar. 1-31, 1973; minimum, 390 mg/l Sept. 1-30, 1972.

Hardness (1971-73): Maximum, 220 mg/l Jan. 1-31, 1972; minimum, 190 mg/l May 1 to June 30, 1973.

Specific conductance: Maximum daily, 830 micromhos Mar. 5-8, 1974; minimum daily, 602 micromhos May 5, 1973.

Water temperatures: Maximum daily, 16.0°C Sept. 19, 1975; minimum daily, 0.5°C on many days during winter months.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL ALUM- INUM (AL) (UG/L)	SUS- PENDED ALUM- INUM (AL) (UG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.											
24...	1200	E35000	7.4	100	--	10	50	20	0	0	0
24...	1600	E35000	7.4	600	--	0	90	60	0	0	0
NOV.											
27...	1200	E35000	7.3	--	--	--	--	--	--	--	--
DEC.											
27...	1030	33000	7.4	--	--	--	--	--	--	--	--
JAN.											
27...	1400	37000	7.7	600	--	10	110	10	--	0	10
MAR.											
04...	1300	31000	7.8	--	--	--	--	--	--	--	--
APR.											
02...	1300	21600	7.6	--	--	--	--	--	--	--	--
28...	1800	22400	7.8	<100	--	<10	40	10	--	0	10
JUNE											
09...	1200	38500	7.5	--	--	--	--	--	--	--	--
26...	1130	50200	7.2	70	70	0	110	20	20	20	5
JULY											
15...	1100	64750	7.2	--	--	--	--	--	--	--	--
AUG.											
13...	1300	65000	7.0	--	--	--	--	--	--	--	--
SEP.											
22...	1100	37600	6.7	140	140	0	200	10	10	10	0

DATE	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)
OCT.											
24...	53	22	60	4.4	3	158	180	9.9	.5	.09	.08
24...	53	21	61	4.1	1	157	180	10	.5	.09	.08
NOV.											
27...	51	21	63	3.9	--	155	170	10	.4	.10	.11
DEC.											
27...	53	20	64	3.8	--	153	170	9.5	.5	.23	.13
JAN.											
27...	51	19	59	4.2	--	153	170	9.8	.5	.20	.22
MAR.											
04...	53	22	59	4.0	0	152	170	10	.4	.12	.11
APR.											
02...	51	22	55	4.2	0	154	180	9.5	.6	.18	.11
28...	57	22	59	3.9	0	165	160	10	.6	.08	.08
JUNE											
09...	51	20	55	4.0	0	154	170	8.6	.5	.09	.07
26...	55	18	54	4.0	0	150	160	8.9	.5	.13	.13
JULY											
15...	51	21	54	3.9	0	146	160	8.6	.5	.10	.10
AUG.											
13...	50	19	56	4.1	0	148	170	9.1	.5	.19	.13
SEP.											
22...	49	19	59	4.4	0	144	170	8.9	.5	.14	.14

E - Estimated.

MISSOURI RIVER MAIN STEM

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06338490 MISSOURI RIVER AT GARRISON DAM, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	AMMONIA NITRO- GEN (MG/L)	TOTAL ORGANIC NITRO- GEN (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (MG/L)	TOTAL NITRO- GEN (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	TOTAL FILT- RABLE RESIDUE (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)
OCT.											
24...	.06	.31	.37	.46	.00	.00	440	--	.60	41600	--
24...	.06	.22	.28	.37	.02	.00	439	--	.60	41500	--
NOV.											
27...	.03	.13	.16	.26	.00	.01	434	--	.59	41000	--
DEC.											
27...	.04	.11	.15	.38	.03	.03	425	--	.58	37900	--
JAN.											
27...	.01	.38	.39	.59	.05	.05	426	--	.58	42600	--
MAR.											
04...	.01	.30	.31	.43	.00	.00	428	--	.58	35800	--
APR.											
02...	.01	.12	.13	.31	.01	.00	423	--	.58	24700	--
28...	.02	.20	.22	.30	.04	.02	434	--	.59	26200	--
JUNE											
09...	.00	.62	.62	.71	.01	.01	410	--	.56	42600	--
26...	.01	.09	.10	.23	.02	.02	413	--	.56	56000	--
JULY											
15...	.00	.39	.39	.49	.02	--	408	--	.55	71300	--
AUG.											
13...	.00	2.4	2.4	2.6	.00	.02	411	--	.56	72100	--
SEP.											
22...	.00	.75	.75	.89	.05	.02	414	430	.56	42000	2

DATE	SUS- PENDE D SOLIDS (MG/L)	HARD- NESS (CA,MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)
OCT.											
24...	0	220	65	36	1.7	680	8.6	11.0	5	2	9.4
24...	0	220	63	37	1.8	680	8.6	11.5	8	3	9.6
NOV.											
27...	6	210	59	39	1.9	675	8.3	6.5	5	1	10.4
DEC.											
27...	1	210	62	39	1.9	680	8.3	2.5	5	1	11.2
JAN.											
27...	0	210	53	38	1.8	630	8.0	.0	5	--	12.0
MAR.											
04...	4	220	71	36	1.7	660	8.3	.5	5	1	13.0
APR.											
02...	6	220	64	35	1.6	660	8.0	1.0	8	1	11.6
28...	16	230	69	35	1.7	685	7.9	1.5	5	2	11.1
JUNE											
09...	--	210	56	36	1.7	640	7.9	5.5	4	2	11.4
26...	--	210	62	35	1.6	640	8.3	9.0	10	1	11.8
JULY											
15...	--	210	68	35	1.6	650	8.3	9.5	--	--	10.0
AUG.											
13...	--	200	55	37	1.7	650	8.1	13.0	8	3	8.5
SEP.											
22...	--	200	58	38	1.8	650	8.2	16.0	12	7	8.4

DATE	PER- CENT SATUR- ATION	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOCCI (COL- ONIES PER 100 ML)	TOTAL ORGANIC CARBON (C) (MG/L)	DIS- SOL- VED ORGANIC CARBON (C) (MG/L)	SUS- PENDE D ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS- PENDE D ARSENIC (AS) (UG/L)
OCT.										
24...	90	.5	E1	E1	3.6	--	--	.00	2	1
24...	93	.5	E1	E1	3.9	--	--	.01	2	0
NOV.										
27...	90	.7	E1	E1	--	--	--	--	--	--
DEC.										
27...	87	1.0	<1	<1	--	--	--	--	--	--
JAN.										
27...	89	--	<1	<1	3.1	--	--	.00	1	0
MAR.										
04...	96	--	<0	<0	--	--	--	--	--	--
APR.										
02...	87	.4	<1	B1	--	--	--	--	--	--
28...	84	1.8	<1	<1	4.0	--	--	.01	2	0
JUNE										
09...	96	1.5	<1	<1	--	7.0	--	--	--	--
26...	110	.6	<1	<1	--	5.9	.7	.01	4	1
JULY										
15...	93	1.1	<1	<1	--	7.6	.7	--	--	--
AUG.										
13...	86	.2	<1	<1	--	3.9	.1	--	--	--
SEP.										
22...	90	.4	B1	B2	--	5.5	--	.00	2	0

E - Estimated.

B - Results based on colony count outside the acceptable range.

MISSOURI RIVER MAIN STEM

06338490 MISSOURI RIVER AT GARRISON DAM, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	SUS- PENDE D BARIUM (BA) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL- LIUM (BE) (UG/L)	SUS- PENDE D BERYL- LIUM (BE) (UG/L)	DIS- SOLVED BERYL- LIUM (BE) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL MIUM (CD) (UG/L)	SUS- PENDE D CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)
OCT.											
24...	1	--	--	0	--	--	0	130	<10	<10	0
24...	2	--	--	0	--	--	0	120	<10	<10	0
NOV.											
27...	4	--	--	--	--	--	--	110	--	--	0
DEC.											
27...	2	--	--	--	--	--	--	130	--	--	0
JAN.											
27...	2	--	--	0	--	--	0	110	<10	<10	0
MAR.											
04...	0	--	--	--	--	--	--	100	--	--	0
APR.											
02...	1	--	--	--	--	--	--	120	--	--	0
28...	2	--	--	0	--	--	0	100	<10	<10	0
JUNE											
09...	1	--	--	--	--	--	--	110	--	--	0
26...	3	0	0	0	0	0	0	110	<10	<10	0
JULY											
15...	1	--	--	--	--	--	--	100	--	--	1
AUG.											
13...	2	--	--	--	--	--	--	100	--	--	0
SEP.											
22...	2	<100	0	--	<10	0	<10	80	<10	<10	0

DATE	TOTAL CHRO- MIUM (CR) (UG/L)	SUS- PENDE D CHRO- MIUM (CR) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED CORALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	SUS- PENDE D COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	SUS- PENDE D LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)
OCT.											
24...	0	0	0	0	<10	<9	1	<100	<99	1	--
24...	0	0	0	0	40	37	3	<100	<98	2	--
NOV.											
27...	--	--	--	--	--	--	--	--	--	--	--
DEC.											
27...	--	--	--	--	--	--	--	--	--	--	--
JAN.											
27...	0	0	0	0	<10	<8	2	<100	<95	5	--
MAR.											
04...	--	--	--	--	--	--	--	--	--	--	--
APR.											
02...	--	--	--	--	--	--	--	--	--	--	--
28...	10	10	0	0	<10	<6	4	<100	<99	1	--
JUNE											
09...	--	--	--	--	--	--	--	--	--	--	--
26...	0	0	0	0	<10	<9	1	<100	<99	1	40
JULY											
15...	--	--	--	--	--	--	--	--	--	--	--
AUG.											
13...	--	--	--	--	--	--	--	--	--	--	--
SEP.											
22...	10	10	0	0	10	8	2	<100	<100	0	30

DATE	SUS- PENDE D LITHIUM (LI) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	SUS- PENDE D MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB- DENUM (MO) (UG/L)	SUS- PENDE D MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	SUS- PENDE D NICKEL (NI) (UG/L)
OCT.										
24...	--	50	.0	.0	.0	--	--	1	--	--
24...	--	50	.1	.1	.0	--	--	1	--	--
NOV.										
27...	--	--	--	--	--	--	--	--	--	--
DEC.										
27...	--	--	--	--	--	--	--	--	--	--
JAN.										
27...	--	50	.0	.0	.0	--	--	3	--	--
MAR.										
04...	--	--	--	--	--	--	--	--	--	--
APR.										
02...	--	--	--	--	--	--	--	--	--	--
28...	--	50	.0	.0	.0	--	--	2	--	--
JUNE										
09...	--	--	--	--	--	--	--	--	--	--
26...	0	40	.1	.0	.1	2	1	1	<50	<47
JULY										
15...	--	--	--	--	--	--	--	--	--	--
AUG.										
13...	--	--	--	--	--	--	--	--	--	--
SEP.										
22...	0	30	.0	.0	.0	1	0	1	<50	<47

06338490 MISSOURI RIVER AT GARRISON DAM, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED NICKEL (NI) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	SUS- PENDE- SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	TOTAL STRON- TIUM (SR) (UG/L)	SUS- PENDE- STRON- TIUM (SR) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)
OCT.										
24...	6	1	0	1	0	--	--	490	.3	50
24...	6	1	0	1	0	--	--	480	.3	70
NOV.										
27...	--	--	--	--	--	--	--	--	--	--
DEC.										
27...	--	--	--	--	--	--	--	--	--	--
JAN.										
27...	11	1	0	1	0	--	--	520	.0	30
MAR.										
04...	--	--	--	--	--	--	--	--	--	--
APR.										
02...	--	--	--	--	--	--	--	--	--	--
28...	1	1	0	1	<10	--	--	580	2.0	20
JUNE										
09...	--	--	--	--	--	--	--	--	--	--
26...	3	1	0	1	1	510	0	540	1.0	20
JULY										
15...	--	--	--	--	--	--	--	--	--	--
AUG.										
13...	--	--	--	--	--	--	--	--	--	--
SEP.										
22...	3	1	0	1	0	460	0	460	.9	--

DATE	SUS- PENDE- ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	DIS- SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS- PENDE- GROSS ALPHA AS U-NAT. (UG/L)	DIS- SOLVED GROSS BETA AS CS-137 (PC/L)	SUS- PENDE- GROSS BETA AS CS-137 (PC/L)	DIS- SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS- PENDE- GROSS BETA AS SR90 /Y90 (PC/L)	DIS- SOLVED RA-226 (RADON METHOD) (PC/L)	DIS- SOLVED NATURAL URANIUM (U) (UG/L)
OCT.										
24...	50	0	--	--	--	--	--	--	--	--
24...	70	0	--	--	--	--	--	--	--	--
NOV.										
27...	--	--	--	--	--	--	--	--	--	--
DEC.										
27...	--	--	--	--	--	--	--	--	--	--
JAN.										
27...	10	20	--	--	--	--	--	--	--	--
MAR.										
04...	--	--	--	--	--	--	--	--	--	--
APR.										
02...	--	--	--	--	--	--	--	--	--	--
28...	20	0	--	--	--	--	--	--	--	--
JUNE										
09...	--	--	--	--	--	--	--	--	--	--
26...	20	4	--	--	--	--	--	--	--	--
JULY										
15...	--	--	--	--	--	--	--	--	--	--
AUG.										
13...	--	--	--	--	--	--	--	--	--	--
SEP.										
22...	0	10	12	<.4	8.2	<.4	6.7	<.4	.08	3.7

SUSPENDED SEDIMENT DISCHARGE MEASUREMENT, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDE- SEDIMENT (MG/L)
OCT.		
24...	1600	5

06338490 MISSOURI RIVER AT GARRISON DAM, N. DAK.--Continued
 BIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

PHYTOPLANKTON

<u>DATE</u>	<u>TOTAL COUNT CELLS/ML</u>	<u>DOMINANT GENERA</u>	<u>PERCENT COMPOSITION</u>	<u>ALGAL GROUP</u>
741127	33	<u>Asterionella</u> <u>Stephanodiscus</u> <u>Cyclotella</u>	64 18 18	Diatom Diatom Diatom
741227	36	<u>Asterionella</u>	100	Diatom
750127	180	<u>Asterionella</u>	89	Diatom
750304	21	<u>Asterionella</u>	100	Diatom
750402	190	<u>Cyclotella</u> <u>Asterionella</u>	82 18	Diatom Diatom
750428	40	<u>Cyclotella</u> <u>Asterionella</u>	67 33	Diatom Diatom
750609	190	<u>Cyclotella</u> <u>Fragilaria</u>	50 40	Diatom Diatom
750626	240	<u>Fragilaria</u>	70	Diatom
750715	28	<u>Cyclotella</u> <u>Melosira</u> <u>Navicula</u>	23 38 31	Diatom Diatom Diatom
750922	20	<u>Cyclotella</u> <u>Melosira</u>	40 60	Diatom Diatom

PERIPHYTON

Collected by plastic strips samplers placed in the stream approximately one month prior to collection date.

<u>DATE</u>	<u>DRY WEIGHT G/M²</u>	<u>ASH WEIGHT G/M²</u>	<u>CHLOROPHYLL A G/M²</u>	<u>CHLOROPHYLL B G/M²</u>
750626	1.0	0.6	0.0	0.0

06338490 MISSOURI RIVER AT GARRISON DAM, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C.), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	670	720	694	688	680	668	675	668	680	635	640	632
2	695	699	694	685	680	660	661	668	680	640	640	632
3	700	690	694	673	682	618	661	688	680	640	643	631
4	690	695	690	673	680	618	661	688	680	640	637	632
5	690	690	685	677	680	641	661	658	682	643	637	632
6	695	690	689	677	680	660	657	658	682	642	637	632
7	685	696	685	683	680	605	670	652	682	640	637	633
8	685	696	685	678	681	620	660	656	685	638	639	632
9	690	696	681	678	681	666	640	656	683	637	642	631
10	690	690	681	680	681	660	670	656	683	640	642	631
11	693	691	681	681	675	655	678	650	683	640	642	635
12	690	688	677	681	674	670	675	650	678	640	640	632
13	690	690	677	681	681	630	660	650	678	639	640	632
14	690	690	678	681	679	660	665	650	680	639	640	632
15	690	690	678	681	681	667	661	650	680	643	640	632
16	695	690	678	686	681	667	669	650	683	645	640	632
17	690	690	685	686	681	667	669	650	679	645	642	632
18	690	686	681	685	681	658	665	649	679	640	642	632
19	690	692	677	681	681	678	671	649	678	640	641	632
20	690	690	670	681	678	670	665	648	679	640	641	632
21	685	687	663	683	682	670	665	648	679	640	640	632
22	690	686	663	683	682	670	665	631	678	642	641	632
23	690	690	663	682	682	661	665	631	679	644	642	632
24	685	690	663	682	687	671	665	632	680	644	641	632
25	690	700	658	688	685	665	665	632	678	640	641	632
26	693	700	658	688	685	670	662	632	679	640	641	632
27	700	692	680	688	682	671	662	632	677	641	641	632
28	690	690	680	688	671	676	661	632	677	640	641	632
29	695	692	678	688	---	672	661	632	680	640	641	632
30	695	695	677	688	---	675	663	632	685	645	641	632
31	690	---	677	688	---	700	---	632	---	645	641	---
MONTH	690	693	678	683	680	659	664	649	680	641	640	632

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	10.5	5.5	2.0	0.5	0.5	1.0	1.0	5.5	8.0	10.5	13.5
2	13.0	10.5	5.5	1.5	0.5	0.5	1.0	1.0	5.5	8.5	13.0	13.0
3	13.5	10.0	5.5	1.5	0.5	0.5	1.0	1.0	6.0	8.5	11.0	14.5
4	13.5	10.0	5.5	1.5	0.5	0.5	1.0	1.0	5.5	8.5	10.5	14.5
5	13.0	10.0	5.0	1.5	0.5	0.5	1.0	1.0	6.5	9.0	11.5	14.0
6	13.0	10.0	5.0	1.0	0.5	0.5	1.0	1.0	6.5	9.0	11.0	14.0
7	13.0	10.0	5.0	1.0	0.5	0.5	1.0	1.0	5.5	10.0	10.5	14.0
8	13.0	9.5	5.0	1.0	0.5	0.5	1.0	1.0	5.0	10.0	11.0	14.0
9	13.0	9.5	4.5	1.0	0.5	0.5	1.0	1.0	5.5	9.5	12.0	14.0
10	12.0	9.5	4.5	1.0	0.5	0.5	1.0	1.5	5.5	10.5	12.0	14.0
11	12.0	9.5	4.5	0.5	0.5	0.5	1.0	1.5	5.5	10.0	13.0	14.0
12	12.0	9.5	4.0	0.5	0.5	0.5	1.0	2.0	6.0	10.0	11.5	14.5
13	12.0	9.0	4.0	0.5	0.5	0.5	1.0	2.0	6.0	11.0	12.0	14.5
14	12.0	9.0	4.0	0.5	0.5	0.5	1.0	2.0	6.5	10.0	13.0	14.5
15	12.0	8.5	4.0	0.5	0.5	0.5	1.0	2.0	6.5	9.5	12.0	14.5
16	11.5	8.5	4.0	0.5	0.5	0.5	1.0	3.0	6.5	9.5	13.0	14.0
17	11.5	8.5	3.5	0.5	0.5	0.5	1.0	3.0	7.0	10.0	12.0	14.0
18	11.5	8.0	3.5	0.5	0.5	0.5	1.0	3.0	7.0	10.5	11.0	14.5
19	11.5	8.0	3.5	0.5	0.5	0.5	1.0	3.0	6.5	10.5	11.5	16.0
20	11.5	8.0	3.5	0.5	0.5	0.5	1.0	3.5	6.5	12.0	11.0	15.5
21	11.0	8.0	3.5	0.5	0.5	0.5	1.0	3.5	8.0	10.0	11.5	15.5
22	11.0	8.0	3.5	0.5	0.5	0.5	1.0	4.0	7.0	9.5	11.0	15.5
23	11.0	7.0	3.0	0.5	0.5	0.5	1.0	4.0	7.0	9.5	11.0	15.5
24	11.5	7.0	3.0	0.5	0.5	0.5	1.0	4.0	8.0	10.0	10.5	15.0
25	11.0	7.0	3.0	0.5	0.5	0.5	1.0	4.0	7.0	10.5	14.5	15.0
26	11.0	6.5	3.0	0.5	0.5	0.5	1.0	4.5	7.0	10.0	14.5	15.0
27	11.0	6.5	3.0	0.5	0.5	1.0	1.0	4.5	9.0	9.0	13.5	15.0
28	11.0	6.5	2.0	0.5	0.5	1.0	1.0	4.5	8.5	9.0	13.5	14.5
29	11.0	6.0	2.0	0.5	---	1.0	1.0	4.5	7.0	9.0	12.0	14.5
30	11.0	6.0	2.0	0.5	---	1.0	1.0	5.0	8.5	9.0	13.0	14.5
31	11.0	---	2.0	0.5	---	1.0	---	5.5	---	10.0	13.0	---
MONTH	12.0	8.5	4.0	1.0	0.5	0.5	1.0	2.5	6.5	9.5	12.0	14.5

MISSOURI RIVER BASIN

06339010 MISSOURI RIVER ABOVE STANTON, N. DAK.

LOCATION.--Lat 47°21'54", long 101°21'28", E½ sec.22, T.14S N., R.84 W., Mercer County, temperature recorder at gaging station on left bank, 9 mi (14 km) south of Riverdale and at mile 1,378 (kilometre 2,233).

DRAINAGE AREA.--181,400 mi² (469,800 km²), approximately.

PERIOD OF RECORD.--Water temperatures: June 1973 to current year.

EXTREMES.--Current year:

Water temperatures: Maximum, 18.0°C Sept. 3, 10, 15; minimum, freezing point on several days during March and April.

Period of record:

Water temperatures: Maximum, 18.0°C Sept. 3, 10, 15, 1975; minimum, freezing point on many days during winter period.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

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

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

KNIFE RIVER BASIN

289

06339300 KNIFE RIVER AT MARSHALL, N. DAK.

LOCATION.--Lat 47°08'17", long 102°20'00", NW¼ sec.10, T.142 N., R.92 W., Dunn County, on right bank 250 ft (75 m) downstream from bridge on State Highway 8 in Marshall.

DRAINAGE AREA.--722 mi² (1,870 km²).

PERIOD OF RECORD.--Chemical analyses: September 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)
OCT.										
18...	1430	2.5	6.6	100	20	38	33	460	8.3	800
NOV.										
26...	1410	5.1	7.1	130	20	55	40	520	10	820
DEC.										
17...	1155	4.1	3.3	170	320	72	41	630	8.6	1000
JAN.										
14...	1435	1.0	14	20	160	90	57	690	9.5	1200
FEB.										
13...	1355	.50	14	100	160	77	60	700	7.5	1290
MAR.										
13...	1320	2.0	11	100	120	72	46	610	8.6	1160
APR.										
21...	1750	3420	1.7	530	100	18	7.3	24	7.5	93
JUNE										
11...	1820	212	5.3	130	20	50	38	280	6.7	371
JULY										
15...	1510	15	8.3	20	10	49	31	280	6.5	512
AUG.										
12...	1445	7.7	9.1	120	20	44	36	350	6.6	640
SEP.										
17...	1100	4.1	7.0	0	10	40	39	400	7.4	686

DATE	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (REST- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT.									
18...	13	678	560	4.7	.9	.23	.02	1570	2.14
NOV.									
26...	0	673	760	18	1.0	.23	--	1810	2.46
DEC.									
17...	0	820	860	6.3	1.1	.23	.02	2180	2.97
JAN.									
14...	0	985	980	12	1.3	.45	.02	2510	3.41
FEB.									
13...	0	1060	940	7.9	.9	.56	.03	2480	3.37
MAR.									
13...	0	952	770	5.8	.9	.56	.04	2120	2.88
APR.									
21...	0	76	50	2.6	.1	2.1	.11	192	.26
JUNE									
11...	0	304	590	4.4	.2	.23	--	1210	1.65
JULY									
15...	0	420	430	3.8	.4	.81	.03	1070	1.46
AUG.									
12...	0	525	500	4.8	.4	.63	.04	1270	1.73
SEP.									
17...	0	563	550	4.8	.5	.56	.02	1400	1.91

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
OCT.									
18...	10.6	230	0	81	13	2500	8.4	10.5	550
NOV.									
26...	24.9	300	0	78	13	2610	8.3	.5	310
DEC.									
17...	24.1	350	0	79	15	3420	8.3	.5	240
JAN.									
14...	6.78	460	0	76	14	3450	8.0	.0	630
FEB.									
13...	3.35	440	0	77	15	3400	7.8	.0	590
MAR.									
13...	11.4	370	0	78	14	2990	8.2	.0	430
APR.									
21...	1770	75	0	38	1.2	285	7.3	2.0	510
JUNE									
11...	693	280	0	68	7.3	2030	8.3	17.5	0
JULY									
15...	43.4	250	0	70	7.7	1680	8.3	26.5	400
AUG.									
12...	26.7	260	0	74	9.5	1760	8.5	23.5	280
SEP.									
17...	15.5	260	0	76	11	2110	8.4	16.5	120

KNIFE RIVER BASIN

06339560 BRUSH CREEK NEAR BEULAH, N. DAK.

LOCATION.--Lat 47°10'43", long 100°47'05", in NW¼SW¼NW¼ sec.25, T.143 N., R.88 W., at bridge on N. Dak. State Highway No. 49, 6.0 mi (9.6 km) south of Beulah.

DRAINAGE AREA.--22 mi² (56 km²), approximately.

PERIOD OF RECORD.--Chemical analyses: October 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL ALUM- INUM (AL) (UG/L)	SUS- PENDED ALUM- INUM (AL) (UG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDED MAN- GANESE (MN) (UG/L)
OCT. 15...	1715	.12	8.1	200	200	0	330	30	30	10
NOV. 29...	1320	.19	14	--	--	--	--	--	--	--
DEC. 19...	1100	.11	18	--	--	--	--	--	--	--
MAR. 17...	1310	6.9	--	--	--	--	--	--	--	--
APR. 17...	1330	37	--	--	--	--	--	--	--	--
23...	1340	26	--	--	--	--	--	--	--	--
MAY 01...	1000	6.2	9.1	9300	9200	80	11000	130	260	180
23...	1115	6.8	9.8	--	--	--	--	--	--	--
AUG. 26...	1830	.06	9.0	--	--	--	--	--	--	--

DATE	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CaCO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)
OCT. 15...	20	81	58	270	9.2	--	521	460	5.8	.3
NOV. 29...	--	110	85	300	9.0	--	611	590	7.3	.3
DEC. 19...	--	100	56	280	7.8	--	591	490	5.9	.3
MAR. 17...	--	--	--	--	--	--	--	--	--	--
APR. 17...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
MAY 01...	80	39	24	78	7.2	0	164	190	3.4	.1
23...	--	100	71	300	8.0	0	445	690	6.7	.2
AUG. 26...	--	59	57	250	8.9	0	531	410	5.9	.3

DATE	BROMIDE (BR) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	TOTAL FILT- RABLE RESIDUE (MG/L)
OCT. 15...	--	.00	--	--	.42	.42	.00	--	1230	1300
NOV. 29...	--	.01	--	--	.31	.32	.03	--	1570	--
DEC. 19...	--	.02	--	--	.46	.48	.02	--	1300	--
MAR. 17...	--	--	--	--	--	--	--	--	--	--
APR. 17...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
MAY 01...	.0	.91	.26	1.5	1.8	2.7	.28	.06	479	--
23...	.1	.15	.03	.97	1.0	1.1	.07	.01	1560	--
AUG. 26...	.0	.06	.00	.50	.50	.56	.32	.00	1140	--

DATE	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	TOTAL NON-FILTRABLE RESIDUE (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	PERCENT SODIUM	SODIUM AD-SORPTION RATIO	SPE-CIFIC CON-DUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT. 15...	1.67	.40	<1	440	0	56	5.6	2090	8.3	10.5
NOV. 29...	2.14	.81	--	620	14	51	5.2	2400	7.8	.0
DEC. 19...	1.77	.39	--	480	0	55	5.6	2040	8.1	.0
MAR. 17...	--	--	--	--	--	--	--	600	--	--
APR. 17...	--	--	--	--	--	--	--	240	--	.0
23...	--	--	--	--	--	--	--	380	--	4.0
MAY 01...	.65	8.11	--	200	33	45	2.4	800	7.9	4.0
23...	2.12	28.6	--	540	97	54	5.6	2150	8.2	10.0
AUG. 26...	1.55	.18	--	380	0	58	5.6	1840	8.2	18.0

DATE	TUR-BIO-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	PER-CENT SATURATION	BIO-CHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	DIS-SOLVED ORGANIC CARBON (C) (MG/L)	SUS-PENDED ORGANIC CARBON (C) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS-PENDED ARSENIC (AS) (UG/L)
OCT.									
15...	1	13.4	128	.3	--	--	--	0	0
NOV.									
29...	3	--	--	--	--	11	.3	--	--
DEC.									
19...	1	--	--	.7	--	12	--	--	--
MAR.									
17...	--	--	--	--	--	--	--	--	--
APR.									
17...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
MAY									
01...	190	9.4	76	2.3	14	--	--	8	6
23...	70	8.8	--	2.4	--	25	.8	--	--
AUG.									
26...	2	13.0	148	1.1	--	--	--	--	--

DATE	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	SUS-PENDED BARIUM (BA) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BERYLLIUM (BE) (UG/L)	SUS-PENDED BERYLLIUM (BE) (UG/L)	DIS-SOLVED BERYLLIUM (BE) (UG/L)	DIS-SOLVED BORON (B) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	SUS-PENDED CADMIUM (CD) (UG/L)
OCT. 15...	0	--	--	--	<10	<10	0	390	<10	<9
NOV. 29...	--	--	--	--	--	--	--	330	--	--
DEC. 19...	--	--	--	--	--	--	--	320	--	--
MAY 01...	2	0	0	0	0	0	0	120	<10	<10
23...	--	--	--	--	--	--	--	300	--	--
AUG. 26...	--	--	--	--	--	--	--	370	--	--

[illegible]

KNIFE RIVER BASIN

06339560 BRUSH CREEK NEAR BEULAH, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TOTAL LITHIUM (LI) (UG/L)	SUS-PENDED LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	SUS-PENDED MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	SUS-PENDED MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)
OCT. 15...	110	20	90	.0	.0	.0	0	0	0	<50
NOV. 29...	--	--	--	--	--	--	--	--	--	--
DEC. 19...	--	--	--	--	--	--	--	--	--	--
MAY 01...	30	10	20	.0	.0	.0	3	2	1	<50
23...	--	--	--	--	--	--	--	--	--	--
AUG. 26...	--	--	--	--	--	--	--	--	--	--

DATE	SUS-PENDED NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	SUS-PENDED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL STRONTIUM (SR) (UG/L)	SUS-PENDED STRONTIUM (SR) (UG/L)	DIS-SOLVED STRONTIUM (SR) (UG/L)	DIS-SOLVED VANADIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)
OCT. 15...	<44	6	1	1	0	--	--	--	.0	40
NOV. 29...	--	--	--	--	--	--	--	--	--	--
DEC. 19...	--	--	--	--	--	--	--	--	--	--
MAY 01...	<46	4	1	0	1	530	10	520	1.2	50
23...	--	--	--	--	--	--	--	--	--	--
AUG. 26...	--	--	--	--	--	--	--	--	--	--

DATE	SUS-PENDED ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED GROSS RA-226 (RADON) (PC/L)	DIS-SOLVED NATURAL URANIUM (U) (UG/L)
OCT. 15...	30	10	<11	<.4	.4	<.4	7.7	<.4	.05	1.0
NOV. 29...	--	--	--	--	--	--	--	--	--	--
DEC. 19...	--	--	--	--	--	--	--	--	--	--
MAY 01...	40	8	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
AUG. 26...	--	--	--	--	--	--	--	--	--	--

SUSPENDED SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS-PENDED SEDIMENT (MG/L)	SUS-PENDED SEDIMENT DISCHARGE (T/DAY)
NOV. 29...	1320	172	.09
DEC. 19...	1100	5	.00
MAY 23...	1115	105	1.9

KNIFE RIVER BASIN

293

06340000 SPRING CREEK AT ZAP, N. DAK.

LOCATION.--Lat 47°17'10", long 101°55'31", in SW¼ sec.14, T.144 N., R.89 W., Mercer County, at gaging station on right bank 250 ft (76 m) downstream from Burlington Northern Railway bridge in Zap, and 9 mi (14 km) upstream from mouth.

DRAINAGE AREA.--549 mi² (1,422 km²).

PERIOD OF RECORD.--Chemical analyses: September 1969 to September 1970, November 1973 to current year.

REMARKS.--Some chemical data furnished by North Dakota State Water Commission. Chemical analyses of miscellaneous samples published for water years 1946, 1972, and 1973.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL ALUM- INUM (AL) (UG/L)	SUS- PENDEED ALUM- INUM (AL) (UG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDEED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.											
16...	1055	6.0	8.2	--	--	--	--	--	--	--	--
NOV.											
29...	1000	7.3	8.4	--	--	--	--	--	--	--	--
DEC.											
17...	1510	8.4	12	--	--	--	--	--	--	--	--
JAN.											
15...	1255	2.8	13	900	880	20	--	--	--	--	--
FEB.											
11...	1400	2.6	20	--	--	--	--	--	--	--	--
MAR.											
17...	1605	31	--	--	--	--	--	--	--	--	--
APR.											
03...	1430	20	10	300	290	<10	--	--	--	--	--
21...	1345	1940	--	--	--	--	--	--	--	--	--
23...	1230	2490	--	--	--	--	--	--	--	--	--
MAY											
01...	1445	738	5.1	--	--	--	--	--	--	--	--
29...	1300	43	8.1	--	--	--	--	--	--	--	--
JULY											
02...	1030	22	11	--	--	--	--	--	--	--	--
23...	1100	66	13	--	--	--	--	--	--	--	--
24...	1500	15	13	--	--	--	--	--	--	--	--
AUG.											
26...	1550	52	5.8	--	--	--	--	--	--	--	--
SEP.											
30...	1200	12	10	390	390	0	340	20	160	150	10

DATE	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	BROMIDE (BR) (MG/L)
OCT.										
16...	74	54	270	11	0	445	500	5.9	--	--
NOV.										
29...	79	58	270	8.1	0	494	520	8.0	--	--
DEC.										
17...	96	58	300	8.6	0	518	520	7.5	--	--
JAN.										
15...	100	66	300	9.8	0	576	550	8.6	.1	--
FEB.										
11...	110	70	380	10	0	673	710	12	--	--
MAR.										
17...	--	--	--	--	--	--	--	--	--	--
APR.										
03...	61	38	170	11	0	308	340	4.7	.5	--
21...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	21	11	60	5.9	0	121	98	2.0	--	--
29...	87	59	190	8.3	0	345	520	6.6	.4	.3
JULY										
02...	82	55	200	8.9	0	372	500	5.8	.4	.1
23...	69	33	190	8.3	0	376	340	3.6	.4	.0
24...	71	37	150	8.8	0	350	280	4.5	.4	.0
AUG.										
26...	27	18	72	9.7	0	149	140	3.3	.3	.0
SEP.										
30...	75	42	190	9.9	0	376	370	6.6	.3	.0

KNIFE RIVER BASIN

06340000 SPRING CREEK AT ZAP, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHOP. PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	TOTAL FILT- RABLE RESIDUE (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT.										
16...	.00	.00	.75	.84	.84	.04	--	--	--	1.62
NOV.										
29...	.05	.02	.27	.29	.34	.02	--	--	--	1.70
DEC.										
17...	.09	.17	.57	.74	.83	.03	--	--	--	1.78
JAN.										
15...	.32	.28	.15	.43	.75	.03	--	--	--	1.90
FEB.										
11...	.59	.16	.60	.85	1.4	.03	--	--	--	2.34
MAR.										
17...	--	--	--	--	--	--	--	--	--	--
APR.										
03...	.37	.14	.83	.97	1.3	.09	--	--	--	1.12
21...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	.43	.26	2.1	2.4	2.8	.30	--	--	--	.38
29...	.00	.01	.82	.83	.83	.10	.01	1130	--	1.54
JULY										
02...	.04	.02	1.4	1.4	1.4	.08	.00	1100	--	1.50
23...	.01	.03	.74	.81	.82	.16	.00	940	--	1.28
24...	.00	.03	1.1	1.1	1.1	.15	.00	822	--	1.12
AUG.										
26...	.29	.00	1.4	1.4	1.7	.22	.00	395	--	.54
SEP.										
30...	.02	.06	1.6	1.7	1.7	.06	.01	940	920	1.28

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)	SUS- PENDED SOLIDS (MG/L)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)
OCT.										
16...	19.3	--	19	410	0	58	5.8	2000	8.3	8.5
NOV.										
29...	24.6	--	6	440	0	57	5.6	2060	8.2	.0
DEC.										
17...	29.7	--	13	480	0	57	6.0	2330	8.2	.0
JAN.										
15...	10.6	--	8	520	0	55	5.7	2350	8.1	.0
FEB.										
11...	12.4	--	16	560	0	59	7.0	3600	8.1	.0
MAR.										
17...	--	--	--	--	--	--	--	1000	--	--
APR.										
03...	44.3	--	20	310	0	53	4.2	1250	--	.0
21...	--	--	--	--	--	--	--	180	--	--
23...	--	--	--	--	--	--	--	290	--	--
MAY										
01...	550	--	732	98	0	55	2.6	500	8.0	5.5
29...	133	--	--	460	110	47	3.9	1600	8.4	15.5
JULY										
02...	65.9	--	--	430	60	50	4.2	1550	8.4	21.5
23...	168	--	--	310	0	56	4.7	1380	8.1	22.0
24...	35.1	--	--	330	0	49	3.6	1200	8.1	22.0
AUG.										
26...	55.5	--	--	140	0	50	2.6	685	8.1	18.0
SEP.										
30...	31.0	24	--	360	0	53	4.4	1330	8.3	10.0

06340000 SPRING CREEK AT ZAP, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	RIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOCCI (COL- ONIES PER 100 ML)	DIS- SOL- VED ORGANIC CARBON (C) (MG/L)	SUS- PENDE D ORGANIC CARBON (C) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS- PENDE D ARSENIC (AS) (UG/L)
OCT. 16...	--	13.4	122	1.5	--	--	--	--	--	--
NOV. 29...	--	11.2	72	1.3	--	--	--	--	--	--
DEC. 17...	--	10.8	79	4.1	--	--	--	--	--	--
JAN. 15...	--	6.6	48	1.2	--	--	--	--	--	--
FEB. 11...	--	6.4	47	.8	--	--	--	--	--	--
MAR. 17...	--	--	--	--	--	--	--	--	--	--
APR. 03...	--	4.8	35	2.2	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
MAY 01...	--	9.8	83	4.1	--	--	--	--	--	--
29...	20	8.8	93	3.2	--	--	--	1.6	--	--
JULY 02...	20	9.8	120	2.6	--	--	12	2.4	--	--
23...	35	5.6	67	--	450	17000	1.8	3.3	--	--
24...	30	8.0	97	4.4	--	--	13	1.9	--	--
AUG. 26...	30	6.8	76	3.9	--	--	22	2.3	--	--
SEP. 30...	15	9.6	90	2.2	--	--	13	1.2	2	0

DATE	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS- PENDE D ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS- PENDE D ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS- PENDE D ARSENIC (AS) (UG/L)
JAN. 15...	--	--	--	--	--	--	--	540	--
APR. 03...	--	--	--	--	--	--	--	310	--
SEP. 30...	2	<100	0	100	<10	0	<10	--	<9

DATE	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	SUS- PENDE D CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	SUS- PENDE D CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	SUS- PENDE D CAD- MIUM (CD) (UG/L)
JAN. 15...	--	--	--	--	--	--	--	100	94
APR. 03...	--	--	--	--	20	17	3	<100	<99
SEP. 30...	1	10	0	10	10	8	2	<100	<98

DATE	TOTAL LITHIUM (LI) (UG/L)	SUS- PENDE D LITHIUM (LI) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	SUS- PENDE D LITHIUM (LI) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	SUS- PENDE D LITHIUM (LI) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)
JAN. 15...	--	--	--	--	--	--	--	--	--
APR. 03...	--	--	--	.0	.0	.0	--	--	--
SEP. 30...	30	0	40	.0	.0	.0	2	0	3

DATE	SUS- PENDE D NICKEL (NI) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	TOTAL NICKEL (NI) (UG/L)	SUS- PENDE D NICKEL (NI) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	TOTAL NICKEL (NI) (UG/L)	SUS- PENDE D NICKEL (NI) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	TOTAL NICKEL (NI) (UG/L)
JAN. 15...	--	--	1	1	0	--	--	--	40
APR. 03...	--	--	0	0	0	--	--	--	30
SEP. 30...	38	12	0	0	0	1200	0	1300	1.4

E - Estimated.

KNIFE RIVER BASIN

06340000 SPRING CREEK AT ZAP, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	SUS- PENDE ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	DIS- SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS- PENDE GROSS ALPHA AS U-NAT. (UG/L)	DIS- SOLVED GROSS BETA AS CS-137 (PC/L)	SUS- PENDE GROSS BETA AS CS-137 (PC/L)	DIS- SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS- PENDE GROSS BETA AS SR90 /Y90 (PC/L)	DIS- SOLVED RA-226 (RADON METHOD) (PC/L)
JAN. 15...	--	--	--	--	--	--	--	--	--
APR. 03...	10	20	--	--	--	--	--	--	--
SEP. 30...	0	10	<12	1.0	19	2.0	15	1.7	.08

SUSPENDED SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDE SEDIM- MENT (MG/L)	SUS- PENDE SEDIM- MENT DIS- CHARGE (T/DAY)
MAY 29...	1300	70	8.3
JULY 02...	1030	68	4.1
24...	1500	126	5.4
AUG. 26...	1550	164	23
SEP. 30...	1200	43	1.4

BIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

PHYTOPLANKTON

DATE	TOTAL COUNT CELLS/ML	DOMINANT GENERA	PERCENT COMPOSITION	ALGAL GROUP
750529	9,100	<u>Cyclotella</u>	49	Blue-Green
		<u>Gomphosphaeria</u>	26	Blue-Green
750702	6,800	<u>Dictyosphaerium</u>	35	Green
		<u>Nitzschia</u>	25	Diatom
		<u>Phormidium</u>	15	Blue-Green
750723	96,000	<u>Oscillatoria</u>	70	Blue-Green
750724	13,000	<u>Crucigenia</u>	30	Green
		<u>Melosira</u>	15	Diatom
		<u>Nitzschia</u>	17	Diatom

PERIPHYTON

Collected by plastic strips samplers placed in the stream approximately one month prior to collection date.

DATE	DRY WEIGHT G/M ²	ASH WEIGHT G/M ²	CHLOROPHYLL A G/M ²	CHLOROPHYLL B G/M ²
750724	23	21	1.2	0.3

LOCATION.--Lat 47°17'06", long 101°37'26", in SE¼ sec.18, T.144 N., R.86 W., Mercer County, at gaging station on right bank at upstream side of highway bridge, 0.5 mi (0.8 km) south of Hazen and 2 mi (3 km) upstream from Antelope Creek.

PERIOD OF RECORD.--Chemical analyses: Water years 1946-51 (partial-record station), October 1969 to September 1971, and September 1973 to current year.
Sediment record: March 1946 to July 1946, and April 1948 to September 1948.

Specific conductance: Maximum daily, 2,550 micromhos Feb. 10; minimum daily, 303 micromhos, Apr. 23.
Water temperatures: Maximum daily, 26.0°C June 25; minimum daily, freezing point on many days during winter months.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SI02) (MG/L)	TOTAL ALUM- INUM (AL) (UG/L)	SUS- PENDED ALUM- INUM (AL) (UG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
DCT. 22...	1300	14	13	400	390	10	880	520	300	170	130
NOV. 30...	1025	31	--	--	--	--	--	--	--	--	--
DEC. 18...	1225	23	12	--	--	--	--	--	--	--	--
JAN. 16...	1135	12	18	500	470	30	820	30	30	0	30
FEB. 12...	1230	7.6	19	--	--	--	--	--	--	--	--
APR. 02...	1300	22	10	600	590	<10	1100	110	80	0	80
29...	1330	5840	--	--	--	--	--	--	--	--	--
MAY 21...	1245	224	10	--	--	--	--	--	--	--	--
JUNE 27...	1100	183	9.1	2300	2300	0	3700	50	280	270	10
JULY 23...	1100	66	13	--	--	--	--	--	--	--	--
AUG. 26...	1220	133	13	--	--	--	--	--	--	--	--

[illegible]

KNIFE RIVER BASIN

06340500 KNIFE RIVER AT HAZEN, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITRO- GEN (MG/L)	TOTAL ORGANIC NITRO- GEN (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)
OCT.										
22...	.04	.13	.97	1.1	1.1	.06	--	--	--	--
NOV.										
30...	.04	.11	.47	.58	.62	.04	--	--	--	--
DEC.										
18...	.12	.18	.62	.80	.92	.02	--	--	--	--
JAN.										
16...	.29	.21	.78	.99	1.3	.04	--	--	--	--
FEB.										
12...	.45	.25	.57	.82	1.3	.03	--	--	--	--
APR.										
02...	.27	.13	.79	.92	1.2	.10	--	--	--	--
29...	.41	.27	6.8	7.1	7.5	.02	--	--	--	--
MAY										
21...	.21	.05	1.6	1.6	1.8	.12	--	--	--	--
JUNE										
27...	.01	.02	.65	.67	.68	.08	--	--	--	--
JULY										
23...	.01	.03	.78	.81	.82	.16	.00	940	1.28	168
AUG.										
26...	.00	.00	.72	.72	.72	.12	--	--	--	--

DATE	SUS- PENDED SOLIDS (MG/L)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)
OCT.										
22...	46	--	--	--	--	1750	8.4	8.0	--	11.0
NOV.										
30...	12	--	--	--	--	2300	8.2	.5	--	11.0
DEC.										
18...	13	--	--	--	--	2270	8.2	.0	--	11.2
JAN.										
16...	12	--	--	--	--	2650	8.2	.0	--	9.4
FEB.										
12...	8	--	--	--	--	3100	7.7	.0	--	6.8
APR.										
02...	24	--	--	--	--	1600	--	.0	--	9.0
29...	2350	--	--	--	--	460	8.2	6.0	--	8.0
MAY										
21...	208	--	--	--	--	1300	8.2	13.0	130	9.0
JUNE										
27...	108	--	--	--	--	1750	8.4	20.0	45	7.2
JULY										
23...	--	310	0	56	4.7	1380	8.1	22.0	35	5.6
AUG.										
26...	80	--	--	--	--	1650	8.5	17.5	25	8.2

DATE	PER- CENT SATUR- ATION	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOCCEI (COL- ONIES PER 100 ML)	TOTAL ORGANIC CARBON (C) (MG/L)	DIS- SOL- VED ORGANIC CARBON (C) (MG/L)	SUS- PENDED ORGANIC CARBON (C) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS- PENDED ARSENIC (AS) (UG/L)
OCT.										
22...	97	2.5	--	53	83	14	--	--	2	1
NOV.										
30...	81	1.5	13	--	40	--	--	--	--	--
DEC.										
18...	82	3.7	--	811	828	--	--	--	--	--
JAN.										
16...	68	1.5	--	--	--	14	--	--	5	3
FEB.										
12...	49	--	--	111	66	--	--	--	--	--
APR.										
02...	66	3.5	--	836	844	15	--	--	3	2
29...	68	6.8	--	2500	4600	--	--	--	--	--
MAY										
21...	90	--	--	160	210	--	17	--	--	--
JUNE										
27...	83	2.8	--	260	360	--	16	3.2	4	2
JULY										
23...	67	3.4	--	450	812000	--	1.8	3.3	--	--
AUG.										
26...	92	3.0	--	560	880	--	45	--	--	--

E - Estimated.

B - Results based on colony count outside the acceptable range.

DATE	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	SUS-PENDED BARIUM (BA) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL RERYL- LIUM (RE) (UG/L)	SUS-PENDED RERYL- LIUM (RE) (UG/L)	DIS-SOLVED RERYL- LIUM (RE) (UG/L)	DIS-SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	SUS-PENDED CAD- MIUM (CD) (UG/L)	DIS-SOLVED CAD- MIUM (CD) (UG/L)
OCT. 22...	1	--	--	--	--	--	--	310	10	9	<1
JAN. 16...	2	--	--	--	--	--	--	450	10	9	1
APR. 02...	1	--	--	--	--	--	--	250	20	20	0
MAY 21...	--	--	--	--	--	--	--	210	--	--	--
JUNE 27...	2	100	100	0	0	0	0	320	<10	<10	0
AUG. 26...	--	--	--	--	--	--	--	310	--	--	--

[illegible][illegible][illegible]

KNIFE RIVER BASIN

06340500 KNIFE RIVER AT HAZEN, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

THE FOLLOWING CHEMICAL ANALYSES FURNISHED BY THE U.S. ARMY CORPS OF ENGINEERS

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	ALKALINITY AS CaCO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
OCT. 01...	1330	14	65	42	226	8.9	460	374	15	1090
NOV. 05...	1215	26	57	43	254	8.0	442	413	4.3	1110
DEC. 04...	1130	23	67	47	304	8.4	558	485	5.0	822
JAN. 15...	1215	12	90	56	400	10	664	605	7.1	1610
FEB. 06...	1330	10	113	60	380	10	708	625	9.0	1570
MAR. 05...	1045	16	74	49	300	11	548	430	8.2	1290
APR. 17...	1030	11	30	10	65	7.6	138	124	2.0	382
MAY 21...	1200	220	63	35	181	8.4	294	393	6.4	926
JUNE 23...	1245	432	60	40	210	8.8	286	480	2.1	1070
JULY 24...	1100	62	54	38	196	8.2	266	385	4.1	940
SEP. 23...	1145	31	56	34	191	7.7	406	301	4.1	880

DATE	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA, MG) (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	DIS-SOLVED OXYGEN (MG/L)
OCT. 01...	1.48	41.2	335	59	5.4	1700	8.7	10.5	20	10.2
NOV. 05...	1.51	78.0	319	63	6.2	1980	8.7	1.0	15	12.5
DEC. 04...	1.12	51.0	363	64	7.0	2450	8.7	.0	15	10.8
JAN. 15...	2.19	52.2	458	65	8.2	2700	8.7	.0	25	9.6
FEB. 06...	2.14	42.4	530	60	7.2	2900	8.7	.0	20	7.8
MAR. 05...	1.76	55.8	385	62	6.6	2250	8.7	.5	20	8.5
APR. 17...	.52	11.3	117	53	2.6	525	8.7	.5	230	11.1
MAY 21...	1.26	550	304	56	4.5	1350	8.7	10.5	80	8.3
JUNE 23...	1.46	1250	314	58	5.2	1450	8.4	20.5	350	6.8
JULY 24...	1.28	157	292	59	5.0	1350	8.7	19.5	35	7.2
SEP. 23...	1.20	73.7	281	59	5.0	1300	8.7	11.0	25	9.3

SUSPENDED SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
OCT. 22...	1300	60	2.3	75
NOV. 30...	1025	172	14	52
DEC. 18...	1225	114	7.1	--
JAN. 16...	1135	25	.81	--
FEB. 12...	1230	77	1.6	--
APR. 02...	1300	43	2.6	--
22...	1110	2290	38400	--
29...	1330	3780	59600	60
MAY 21...	1245	146	88	96
JUNE 27...	1100	137	68	91
JULY 23...	1100	172	31	67
AUG. 26...	1220	150	54	89

KNIFE RIVER BASIN

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06340500 KNIFE RIVER AT HAZEN. N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1470	1930	2100	2060	1960	1420	422	1700	1650	1330	1040
2	---	1520	1850	2130	2100	1960	1530	409	1600	1640	1330	1170
3	---	1560	1910	2160	2150	2030	1700	468	1600	1660	1280	1100
4	---	1570	1840	2160	2100	1930	1820	555	1630	1680	1380	1120
5	---	1590	1950	2150	2200	1930	1680	640	1560	1660	1280	1160
6	---	1580	1950	2150	2280	1930	1750	737	1600	1570	1370	1170
7	---	1620	1970	2150	2170	1960	1630	813	1540	1560	1380	1140
8	---	1570	1960	2100	2260	2300	1660	919	1530	1330	1450	1260
9	---	1600	2040	2070	2330	2320	1600	1020	1520	1520	1340	1260
10	---	1510	1980	2100	2550	2400	1640	1040	1490	1440	1320	1290
11	---	1640	1930	2050	2250	2310	1500	1040	1760	1670	1440	1320
12	---	1660	2010	2040	2050	2260	1430	1180	1760	1630	1340	1340
13	---	1530	2000	1990	2120	2240	1350	1200	1910	1660	1300	1300
14	---	1580	2050	1810	1870	2180	1150	1350	1700	1650	1260	1230
15	---	1660	2050	2300	2070	1400	1000	1440	1650	1490	1280	1420
16	---	1720	2060	2420	2030	1750	765	1270	1800	1350	1400	1310
17	---	1710	1970	2370	1820	1580	525	1190	1680	1390	1300	1310
18	---	1770	2060	2240	1700	1260	400	1170	1750	1420	1420	1280
19	---	1750	2050	2140	1990	980	391	1210	1750	1440	1310	1220
20	---	1760	2050	2220	1790	930	363	1240	1800	1440	1360	1260
21	---	1760	2050	2220	1840	792	337	1200	1410	1400	1360	1200
22	1620	1760	2030	2110	1890	920	310	1230	1520	1430	1490	1280
23	1550	1750	2030	2160	1890	1100	303	1250	1500	1400	1380	1260
24	1530	1770	2030	2100	1940	1340	339	1450	1670	1420	1480	1320
25	1500	1810	2050	2150	1860	1370	351	1440	1700	1420	1380	1260
26	1450	1820	2030	2130	1820	1380	355	1480	1670	1400	1420	1360
27	1430	1840	2030	2160	1830	1430	434	1570	1710	1370	1680	1320
28	1580	1880	2070	2170	1890	1530	505	1490	1630	1220	1720	1330
29	1490	1890	2070	2180	---	1470	551	1570	1700	1360	1490	1310
30	1560	1890	2100	2250	---	1500	438	1570	1700	1360	1080	1340
31	1520	---	2140	2210	---	1500	---	1680	---	1370	1060	---
MONTH	---	1680	2010	2150	2030	1680	974	1140	1650	1480	1370	1260

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	4.5	0.0	0.0	0.0	0.0	0.0	5.5	16.0	23.0	21.0	18.0
2	---	4.0	0.0	0.0	0.0	0.0	0.0	6.5	15.0	22.5	20.0	16.0
3	---	1.0	0.0	0.0	0.0	0.0	0.0	7.5	19.0	22.0	20.5	16.5
4	---	2.5	0.0	0.0	0.0	0.0	0.0	8.5	20.0	23.5	22.0	16.0
5	---	1.5	0.0	0.0	0.0	0.0	0.0	9.0	16.5	24.0	19.5	14.0
6	---	2.0	0.0	0.0	0.0	0.0	0.0	10.0	17.0	25.0	17.5	16.0
7	---	2.5	0.0	0.0	0.0	0.0	0.5	10.5	16.5	25.0	21.0	15.0
8	---	3.5	0.0	0.0	0.0	0.0	0.0	10.0	17.0	23.5	20.0	14.0
9	---	3.0	0.0	0.0	0.0	0.0	0.0	10.5	15.0	22.0	20.0	14.0
10	---	5.0	0.0	0.0	0.0	0.0	0.0	11.0	14.0	21.0	19.5	15.5
11	---	4.0	0.5	0.0	0.0	0.0	0.0	12.0	14.5	20.0	20.0	13.5
12	---	1.0	0.0	0.0	0.0	0.0	0.0	12.0	17.5	20.0	19.5	11.0
13	---	0.0	0.0	0.0	0.0	0.0	0.0	14.0	17.0	22.5	17.5	11.5
14	---	0.0	0.0	0.0	0.0	0.5	0.0	13.5	18.0	21.0	19.5	18.0
15	---	0.0	0.0	0.0	0.0	1.0	0.0	14.0	17.0	23.0	18.0	13.5
16	---	0.0	0.0	0.0	0.0	1.0	1.0	16.0	17.0	24.5	17.5	15.5
17	---	0.5	0.0	0.0	0.0	1.0	1.0	16.0	20.0	24.5	17.5	16.0
18	---	0.0	0.0	0.0	0.0	1.0	1.0	17.5	18.0	22.5	16.5	11.0
19	---	0.0	0.0	0.0	0.0	1.0	0.0	16.0	18.0	21.0	16.0	9.5
20	---	0.0	0.0	0.5	0.0	1.0	1.0	14.0	19.0	24.5	16.5	9.0
21	---	0.0	0.0	0.0	0.5	1.0	1.0	13.0	19.0	23.0	18.0	9.0
22	7.5	0.5	0.0	0.0	0.0	0.0	1.5	12.5	19.0	21.0	17.5	10.0
23	7.0	0.0	0.0	0.5	0.5	0.0	3.0	12.5	23.5	21.0	19.0	11.5
24	7.0	0.0	0.0	0.0	0.5	0.0	4.0	12.5	25.0	19.0	19.5	11.0
25	6.0	0.0	0.0	0.0	0.0	0.0	6.5	14.5	26.0	19.5	15.5	11.0
26	6.0	0.0	0.0	0.0	0.0	0.0	7.0	14.0	22.0	23.5	15.5	11.0
27	5.0	0.0	0.0	0.0	0.0	0.0	8.0	16.0	23.5	22.0	16.0	11.5
28	5.0	0.0	0.5	0.0	0.0	0.0	7.5	14.5	20.5	24.0	18.0	12.0
29	7.0	0.0	0.0	0.0	---	0.0	7.5	13.5	21.0	24.0	20.5	11.0
30	9.5	0.0	0.0	0.0	---	0.0	6.0	14.5	21.5	25.0	19.5	9.0
31	8.0	---	0.0	0.0	---	0.0	---	14.0	---	24.5	22.5	---
MONTH	---	1.0	0.0	0.0	0.0	0.0	2.0	12.5	19.0	22.5	18.5	13.0

MISSOURI RIVER MAIN STEM

06340900 MISSOURI RIVER NEAR HENSLER, N. DAK.

LOCATION.--Lat 47°16'45", long 101°11'03", in SW¼ sec.22, T.144 N., R.83 W., McLean County, temperature recorder at gaging station, on left bank 2.8 mi (4.5 km) northwest of Hensler, about 7.5 mi (12.1 km) west of Washburn, and at mile 1362 (kilometre 2,191).

DRAINAGE AREA.--183,000 mi² (474,000 km²), approximately,

PERIOD OF RECORD.--Water temperatures: April 1967 to September 1974, April 1975 to September 1975.

EXTREMES.--Current year:

Water temperatures: Maximum daily, 17.5°C Aug. 26-27, Sept. 23-24; minimum daily, 0.5°C on several days in April.

Period of record:

Water temperatures: Maximum, 17.5°C Aug. 26-27, Sept. 23-24, 1975; freezing point on many days during winter months.

REMARKS.--No records available for period Oct. 1, 1974 - Mar. 31, 1975; recorder malfunctioned.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	0.5	0.5	3.0	2.5	8.5	8.5	---	---	14.0	14.0	16.5	15.5
2	0.5	0.5	3.0	2.5	9.0	8.5	---	---	16.0	14.0	16.0	15.5
3	0.5	0.5	---	---	9.0	8.5	---	---	16.0	15.0	16.5	15.5
4	0.5	0.5	---	---	9.0	9.0	---	---	15.0	14.0	16.5	16.5
5	0.5	0.5	---	---	10.0	9.0	---	---	14.5	14.0	16.5	16.0
6	0.5	0.5	---	---	10.0	9.5	---	---	15.0	14.0	16.5	16.5
7	0.5	0.5	---	---	9.5	9.0	---	---	15.0	14.5	16.5	16.0
8	0.5	0.5	---	---	9.5	8.5	13.5	13.0	15.5	15.0	16.5	16.5
9	1.0	0.5	---	---	8.5	8.5	13.5	12.5	15.5	15.0	16.5	15.5
10	2.0	1.0	---	---	8.5	8.5	14.0	13.0	16.0	15.5	16.5	16.0
11	2.0	2.0	---	---	8.5	8.0	14.0	13.0	16.0	15.5	16.5	16.5
12	2.0	2.0	---	---	9.0	8.0	14.0	13.0	16.0	16.0	16.5	16.0
13	2.0	2.0	---	---	9.0	8.5	15.0	14.0	16.0	16.0	16.5	16.0
14	2.0	2.0	---	---	9.0	8.5	15.0	14.0	16.0	16.0	17.0	16.5
15	2.0	2.0	---	---	8.5	8.5	14.0	12.5	16.0	16.0	17.0	16.5
16	2.5	2.0	---	---	9.0	8.5	13.5	12.5	16.0	15.5	17.0	16.5
17	2.5	2.5	---	---	9.5	9.0	14.0	13.0	16.0	15.0	17.0	16.5
18	2.5	2.5	---	---	9.5	9.0	14.0	13.5	16.0	15.0	16.5	15.0
19	2.5	2.5	6.0	5.0	9.0	9.0	14.5	13.5	15.0	15.0	15.5	15.0
20	2.5	2.5	6.0	6.0	9.0	8.5	15.5	14.5	15.0	15.0	16.0	15.5
21	2.5	2.5	6.0	6.0	9.0	9.0	15.5	14.0	15.0	15.0	17.0	16.0
22	2.5	2.5	6.5	6.0	9.5	9.0	14.0	13.5	---	---	17.0	17.0
23	2.5	2.5	6.5	6.5	10.0	9.0	13.5	13.0	---	---	17.5	17.0
24	2.5	2.5	7.5	6.5	11.0	9.0	14.0	13.5	---	---	17.5	17.0
25	3.0	2.5	7.5	7.5	11.0	9.5	15.0	14.0	---	---	17.0	16.5
26	3.5	3.0	7.5	7.5	---	---	15.0	14.0	17.5	16.0	17.0	16.5
27	3.5	3.5	7.5	7.5	---	---	14.0	13.0	17.5	16.0	16.5	16.5
28	3.5	3.0	7.5	7.5	---	---	13.5	13.0	17.0	16.0	16.5	16.5
29	3.0	3.0	8.0	7.5	---	---	14.0	13.0	16.5	16.5	16.5	16.5
30	3.0	3.0	8.5	8.0	---	---	14.0	14.0	16.5	15.0	16.5	15.5
31	---	---	8.5	8.0	---	---	14.0	14.0	16.5	15.5	---	---
MONTH	3.5	0.5	---	---	11.0	8.0	---	---	17.5	14.0	17.5	15.0

PAINTED WOODS CREEK BASIN

303

06341800 PAINTED WOODS CREEK NEAR WILTON, N. DAK.

LOCATION.--Lat 47°16'30", long 100°47'30", in SW¼SW¼ sec.23, T.144 N., R.80 W., McLean County, at gaging station on right bank 600 ft (180 m) upstream from county highway bridge, 7 mi (11 km) upstream from Yanktonai Creek, and 8 mi (13 km) north of Wilton.

DRAINAGE AREA.--427 mi² (1,110 km²), approximately, of which about 310 mi² (800 km²) probably is noncontributing.

PERIOD OF RECORD.--Chemical analyses: September 1970 to current year.

REMARKS.--Miscellaneous samples of chemical data published for water years 1958-64, 1970.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MANG- NESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED POT- TAS- SIUM (K) (MG/L)	BICAR- BONATE (MG/L)	CAR- BONATE (MG/L)
OCT. 24...	1210	.15	9.1	--	30	30	51	62	450	14	776	14
NOV. 19...	1430	.21	11	--	40	20	52	63	440	14	816	0
DEC. 26...	1500	.18	18	--	40	370	83	79	470	13	978	--
APR. 03...	1245	.60	18	--	80	650	68	46	200	11	480	0
MAY 19...	1540	5.9	13	10	140	310	64	47	170	9.1	431	0
JUNE 30...	1430	46	6.5	--	130	20	26	19	94	8.0	226	0
JULY 24...	1430	1.6	2.7	--	170	20	31	47	240	11	427	101
SEP. 23...	1400	.25	3.6	0	20	10	31	54	350	14	652	0

DATE	ALKA- LINITY AS CaCO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM
OCT. 24...	660	670	21	.2	.53	.04	--	2.28	.68	380	0	71
NOV. 19...	669	640	19	.2	.03	.07	1720	2.34	.98	390	0	70
DEC. 26...	802	730	20	.2	.13	.08	1920	2.61	.93	530	0	65
APR. 03...	394	360	9.3	.3	.11	.10	954	1.30	1.55	360	0	54
MAY 19...	354	330	8.0	.2	.02	.06	932	1.27	14.8	350	1	50
JUNE 30...	185	150	4.7	.1	.05	.11	471	.64	58.5	140	0	57
JULY 24...	518	310	8.2	.2	.00	.13	1000	1.36	4.32	270	0	65
SEP. 23...	535	490	15	.2	.02	.04	1300	1.77	.88	300	0	71

PAINTED WOODS CREEK BASIN

06341800 PAINTED WOODS CREEK NEAR WILTON, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	CYANIDE (CN) (MG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)
OCT. 24...	10	2500	8.4	7.0	30	10	12.0	--	--	--	650	--
NOV. 19...	9.7	2600	8.4	4.0	30	4	10.0	--	--	--	590	--
DEC. 26...	8.9	2900	8.5	1.0	20	3	5.8	--	--	--	680	--
APR. 03...	4.6	1550	--	.0	40	15	--	--	--	--	280	--
MAY 19...	3.9	1320	8.4	18.5	55	10	8.8	.01	4	100	330	0
JUNE 30...	3.4	650	7.9	22.0	100	230	3.7	--	--	--	200	--
JULY 24...	6.3	1050	8.9	22.0	100	15	--	--	--	--	540	--
SEP. 23...	8.8	1700	8.4	14.5	30	7	--	.00	4	<100	520	0

DATE	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
OCT. 24...	--	--	2	1	--	--	--	--	--	--	--	10
NOV. 19...	--	--	12	4	--	--	--	--	--	--	--	10
DEC. 26...	--	--	10	1	--	--	--	--	--	--	--	0
APR. 03...	--	--	9	0	--	--	--	--	--	--	--	40
MAY 19...	0	0	7	2	120	.9	3	7	0	620	.1	10
JUNE 30...	--	--	39	2	--	--	--	--	--	--	--	20
JULY 24...	--	--	10	3	--	--	--	--	--	--	--	6
SEP. 23...	10	0	4	0	150	.4	1	7	0	480	2.7	10

MISSOURI RIVER MAIN STEM

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06342500 MISSOURI RIVER AT BISMARCK, N. DAK.

LOCATION.--Lat 46°48'51", long 100°49'12", in SE¼NW¼SE¼ sec.31, T.139 N., R.80 W., Burleigh County, at gaging station, on left bank 40 ft (12 m) upstream from Bismarck city waterplant, 2,100 ft (640 m) downstream from Burlington Northern Railway bridge, 1.6 mi (2.6 km) northwest of Bismarck Post Office, 3.5 mi (5.6 km) upstream from Heart River and at mile 1,314.5 (kilometre 2,115.0).

DRAINAGE AREA.--186,400 mi² (482,800 km²), approximately.

PERIOD OF RECORD.--Chemical analyses: July 1969 to September 1972 (monthly), October 1972 to current year.
Specific conductance: October 1972 to current year (weekly).
Water temperatures: October 1966 to current year.
Sediment records: June 1946 to current year.

EXTREMES.--Current year:

Water temperatures: Maximum, 13.0°C Oct. 10 and 11; minimum, freezing point on many days during winter months.

Sediment concentration: Maximum daily, 248 mg/l Jan. 4; minimum daily, 45 mg/l Jan. 16-21.

Sediment discharge: Maximum daily, 41,400 tons July 13, 15; minimum daily, 2,670 tons Jan. 16, 18 and 19.

Period of record:

Water temperatures: Maximum, 19.0°C on several days during July and August 1968; minimum, freezing point on many days during winter months.

Sediment concentration (1972-74): Maximum daily, 2,800 mg/l May 7, 1972; minimum daily, 25 mg/l Dec. 30, 31, 1973, Jan. 1, 1974.

Sediment discharge (1972-74): Maximum daily, 258,000 tons Apr. 8, 1972; minimum daily, 1,210 tons, Dec. 31, 1973.

REMARKS.--Sediment records from June 1946 to September 1971 are available from Corps of Engineers, Omaha, Neb.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL ALUM- INUM (AL) (UG/L)	SUS- PENDED ALUM- INUM (AL) (UG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.											
09...	1515	E29000	7.6	--	--	--	--	--	--	--	--
22...	1415	E29000	--	--	--	--	--	--	--	--	--
NOV.											
05...	1000	E25000	--	--	--	--	--	--	--	--	--
07...	1530	E27600	--	--	--	--	--	--	--	--	--
26...	1530	E25000	--	--	--	--	--	--	--	--	--
DEC.											
09...	1400	E29000	--	--	--	--	--	--	--	--	--
26...	1600	E25000	--	--	--	--	--	--	--	--	--
JAN.											
13...	1200	E19000	--	--	--	--	--	--	--	--	--
30...	1100	E25000	8.2	--	--	--	--	--	--	--	--
FEB.											
10...	1500	E36000	--	--	--	--	--	--	--	--	--
24...	1545	E30000	--	--	--	--	--	--	--	--	--
MAR.											
11...	1300	E30000	7.4	--	--	--	--	--	--	--	--
APR.											
01...	1400	E30000	--	--	--	--	--	--	--	--	--
28...	1400	E21000	7.3	--	--	--	--	--	--	--	--
MAY											
09...	1315	E25000	--	--	--	--	--	--	--	--	--
22...	1145	E36000	--	--	--	--	--	--	--	--	--
JUNE											
05...	1515	E38000	7.5	1500	1500	10	3000	30	60	60	0
24...	0945	E41700	--	--	--	--	--	--	--	--	--
JULY											
03...	1445	E50000	7.3	--	--	--	--	--	--	--	--
16...	1245	E69700	--	--	--	--	--	--	--	--	--
25...	1630	E66700	--	--	--	--	--	--	--	--	--
30...	1200	E66000	7.4	--	--	--	--	--	--	--	--
AUG.											
01...	1100	E67500	--	--	--	--	--	--	--	--	--
12...	1100	E66000	--	--	--	--	--	--	--	--	--
21...	1600	E56700	--	--	--	--	--	--	--	--	--
SEP.											
08...	1100	E30000	7.0	--	--	--	--	--	--	--	--
23...	1345	E37000	--	--	--	--	--	--	--	--	--

E - Estimated.

MISSOURI RIVER MAIN STEM

06342500 MISSOURI RIVER AT BISMARCK, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAG- NESIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)	ALKA- LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO- RIDE (CL) (MG/L)	DIS-SOLVED FLUO- RIDE (F) (MG/L)	BROMIDE (BR) (MG/L)
OCT.										
09...	54	22	62	4.4	--	160	180	11	--	--
22...	--	--	--	--	--	--	--	--	--	--
NOV.										
05...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	0	--	--	--	--	--
DEC.										
09...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
JAN.										
13...	--	--	--	--	0	--	--	--	--	--
30...	54	20	59	4.2	--	154	170	11	--	--
FEB.										
10...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
MAR.										
11...	53	21	59	4.4	0	152	170	11	--	--
APR.										
01...	--	--	--	--	--	--	--	--	--	--
28...	47	18	57	4.4	0	148	150	9.7	--	--
MAY										
09...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
JUNE										
05...	52	20	54	4.0	0	155	160	8.8	.5	.1
24...	--	--	--	--	--	--	--	--	--	--
JULY										
03...	53	19	57	4.1	0	148	170	8.2	.6	.1
16...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
30...	51	20	57	4.4	0	148	170	11	.6	.1
AUG.										
01...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
SEP.										
08...	52	20	56	4.2	0	151	160	7.4	.5	.0
23...	--	--	--	--	--	--	--	--	--	--

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)
OCT.										
09...	.11	.01	.43	.44	.55	.07	--	447	.61	--
22...	.00	.04	.42	.46	.46	.03	--	445	.61	--
NOV.										
05...	.11	.12	.03	.15	.26	.04	--	445	.61	--
07...	--	--	--	--	--	--	--	--	--	--
26...	.10	.01	.36	.37	.47	.08	--	441	.60	--
DEC.										
09...	.11	.04	.20	.24	.35	.02	--	424	.58	--
26...	.13	.04	.10	.14	.27	.02	--	423	.58	28600
JAN.										
13...	.08	.03	.44	.47	.55	.02	--	474	.64	24300
30...	.12	.00	.49	.49	.61	.03	--	429	.58	29000
FEB.										
10...	.00	.01	.43	.44	.44	.05	--	425	.58	41300
24...	.12	.01	.22	.23	.35	.00	--	428	.58	--
MAR.										
11...	.12	.02	.16	.18	.30	.01	--	420	.57	34000
APR.										
01...	.12	.01	.28	.29	.41	.01	--	418	.57	33900
28...	.19	.07	.67	.74	.93	1.5	--	384	.52	21800
MAY										
09...	.11	.02	.32	.34	.45	.03	--	435	.59	29400
22...	.08	.01	.53	.54	.62	.03	--	436	.59	42400
JUNE										
05...	.11	.00	.04	.04	.15	.05	.01	417	.57	42800
24...	.10	.04	.44	.48	.58	.02	--	415	.56	46700
JULY										
03...	.13	.02	.60	.62	.75	.05	.01	406	.55	54800
16...	.12	.00	.39	.39	.51	.04	--	409	.56	77000
25...	--	--	--	--	--	--	--	--	--	--
30...	.08	.00	.38	.38	.46	.02	.00	415	.56	74000
AUG.										
01...	--	--	--	--	--	--	--	--	--	--
12...	.17	.00	.34	.34	.51	.02	--	410	.56	73100
21...	--	--	--	--	--	--	--	--	--	--
SEP.										
08...	.19	.00	.47	.47	.66	.07	.00	414	.56	--
23...	.16	.00	.25	.25	.41	.04	--	415	.56	--

MISSOURI RIVER MAIN STEM

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06342500 MISSOURI RIVER AT BISMARCK, N. DAK.--Continued
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	SUS- PENDED SOLIDS (MG/L)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHDS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)
OCT.										
09...	17	230	65	37	1.8	690	8.3	13.0	6	9.6
22...	37	--	--	--	--	695	8.7	10.0	7	9.5
NOV.										
05...	39	--	--	--	--	670	8.5	7.5	--	9.8
07...	--	--	--	--	--	--	--	--	--	--
26...	64	--	--	--	--	680	8.4	3.0	10	11.8
DEC.										
09...	20	--	--	--	--	695	8.3	2.0	4	12.8
26...	28	--	--	--	--	670	8.4	.5	7	12.4
JAN.										
13...	4	--	--	--	--	650	8.4	.0	5	13.4
30...	9	220	63	37	1.7	675	8.2	.0	3	12.4
FEB.										
10...	11	--	--	--	--	680	8.4	.0	3	12.2
24...	5	--	--	--	--	--	8.2	.5	3	11.6
MAR.										
11...	4	220	67	36	1.7	652	7.6	.0	3	9.7
APR.										
01...	6	--	--	--	--	665	8.1	.0	2	12.6
28...	239	190	44	39	1.8	650	8.0	5.0	120	10.6
MAY										
09...	116	--	--	--	--	720	8.3	5.5	20	11.2
22...	56	--	--	--	--	650	8.4	6.0	15	11.4
JUNE										
05...	--	210	58	35	1.6	660	8.2	11.0	15	10.4
24...	--	--	--	--	--	660	8.2	13.0	10	9.8
JULY										
03...	--	210	62	37	1.7	635	8.2	12.5	15	9.6
16...	--	--	--	--	--	650	8.3	13.5	15	9.4
25...	--	--	--	--	--	--	--	--	--	--
30...	--	210	61	37	1.7	660	8.0	15.5	7	8.6
AUG.										
01...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	650	8.1	15.0	9	9.2
21...	--	--	--	--	--	--	--	--	--	--
SEP.										
08...	--	210	61	36	1.7	645	8.1	14.5	1	8.6
23...	--	--	--	--	--	650	8.2	15.5	15	8.1

DATE	PER- CENT SATUR- ATION	CHEM- ICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	TOTAL ORGANIC CARBON (C) (MG/L)	DIS- SOL- VED ORGANIC CARBON (C) (MG/L)	SUS- PENDED ORGANIC CARBON (C) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS- PENDED ARSENIC (AS) (UG/L)
OCT.										
09...	96	7	--	83	81	4.6	--	--	--	--
22...	94	12	--	838	83	7.2	--	--	--	--
NOV.										
05...	86	6	--	--	--	5.2	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
26...	93	1	--	817	82	5.8	--	--	--	--
DEC.										
09...	98	11	--	69	82	3.4	--	--	--	--
26...	91	9	--	57	82	4.3	--	--	--	--
JAN.										
13...	97	9	--	156	<1	4.6	--	--	--	--
30...	87	--	--	53	85	4.7	--	--	--	--
FEB.										
10...	89	16	--	822	<1	4.6	--	--	--	--
24...	85	6	--	46	<1	4.2	--	--	--	--
MAR.										
11...	--	12	--	--	--	5.8	--	--	--	--
APR.										
01...	92	1	--	116	82	3.1	--	--	--	--
28...	88	24	--	880	86	17	--	--	--	--
MAY										
09...	94	12	--	420	89	5.8	--	--	--	--
22...	97	13	--	34	2	3.5	--	--	--	--
JUNE										
05...	99	14	1.2	190	818	--	5.6	.5	2	0
24...	98	13	--	21	10	5.0	--	--	--	--
JULY										
03...	94	15	.3	--	85	--	2.9	.5	--	--
16...	95	7	--	<1	2	5.7	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
30...	92	8	.5	820	84	--	5.7	.9	--	--
AUG.										
01...	--	--	--	--	--	--	--	--	--	--
12...	96	13	--	8300	87	4.9	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
SEP.										
08...	88	15	1.2	81720	836	--	3.6	.2	--	--
23...	85	11	--	8400	81	5.9	--	--	--	--

B - Results based on colony count outside the acceptable range.

MISSOURI RIVER MAIN STEM

06342500 MISSOURI RIVER AT BISMARCK, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	SUS- PENDE D BARIUM (BA) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL- LIUM (BE) (UG/L)	SUS- PENDE D BERYL- LIUM (BE) (UG/L)	DIS- SOLVED BERYL- LIUM (BE) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	SUS- PENDE D CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)
JUNE 05...	2	0	0	0	0	0	0	<10	<9	1	10

DATE	SUS- PENDE D CHRO- MIUM (CR) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	SUS- PENDE D COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	SUS- PENDE D LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	SUS- PENDE D LITHIUM (LI) (UG/L)
JUNE 05...	10	0	10	7	3	<100	<97	3	30	0

DATE	DIS- SOLVED LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	SUS- PENDE D MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB- DENUM (MO) (UG/L)	SUS- PENDE D MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	SUS- PENDE D NICKEL (NI) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)
JUNE 05...	40	.2	.1	.1	3	0	3	<50	<48	2

DATE	TOTAL SELE- NIUM (SE) (UG/L)	SUS- PENDE D SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL STRON- TIUM (SR) (UG/L)	SUS- PENDE D STRON- TIUM (SR) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	SUS- PENDE D ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
JUNE 05...	1	0	1	530	0	530	.0	20	20	0

SUSPENDED SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDE D SEDI- MENT (MG/L)	SUS- PENDE D SEDI- MENT (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	RED MAT. FALL DIAM. % FINER THAN .062 MM
NOV. 07...	1530	154	11500	16	48	99	100	1	
JUNE 24...	0945	192	21600	20	50	99	100	--	
JULY 25...	1630	236	42500	23	45	96	100	--	
AUG. 01...	1100	216	39400	--	--	--	--	2	
21...	1600	148	22700	36	64	98	100	2	

DATE	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM	BED MAT. FALL DIAM. % FINER THAN 4.00 MM	BED MAT. FALL DIAM. % FINER THAN 8.00 MM
NOV. 07...	4	86	99	99	100	--	--
JUNE 24...	--	--	--	--	--	--	--
JULY 25...	--	--	--	--	--	--	--
AUG. 01...	4	65	93	97	98	99	100
21...	4	65	97	98	99	100	--

06342500 MISSOURI RIVER AT BISMARCK, N. DAK.--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	9.0	10.0	8.5	3.0	2.5	0.5	0.5	0.0	0.0	0.0	0.0
2	10.5	9.0	8.5	8.0	3.0	2.5	0.5	0.5	0.0	0.0	0.5	0.0
3	12.0	10.5	8.0	8.0	3.0	3.0	0.5	0.5	0.0	0.0	0.5	0.0
4	12.5	12.0	8.0	8.0	3.0	3.0	0.5	0.5	0.0	0.0	0.0	0.0
5	12.5	11.5	8.0	8.0	3.0	3.0	1.0	0.5	0.0	0.0	1.5	0.0
6	11.5	11.0	8.0	8.0	3.5	3.0	1.0	0.5	0.0	0.0	1.5	0.0
7	11.0	10.5	8.5	8.0	3.5	3.0	0.5	0.5	0.0	0.0	1.0	0.0
8	12.0	10.5	8.5	8.5	3.0	2.0	0.5	0.5	0.0	0.0	0.5	0.0
9	12.5	12.5	8.5	8.0	2.0	2.0	0.5	0.5	0.0	0.0	0.0	0.0
10	13.0	12.5	8.0	8.0	3.0	2.0	1.0	0.5	0.0	0.0	0.5	0.0
11	13.0	12.5	8.0	8.0	3.0	3.0	1.5	0.5	0.0	0.0	1.0	0.0
12	12.5	11.0	8.0	7.5	3.0	3.0	1.5	0.5	0.0	0.0	1.0	0.0
13	11.0	10.5	7.5	6.0	3.0	3.0	0.5	0.5	0.0	0.0	0.0	0.0
14	10.5	10.5	6.0	6.0	3.0	2.0	0.5	0.5	0.0	0.0	0.0	0.0
15	10.5	10.5	6.0	5.5	2.0	2.0	0.5	0.5	0.0	0.0	0.0	0.0
16	10.5	10.0	6.0	5.5	2.5	2.5	0.5	0.5	0.0	0.0	0.5	0.0
17	11.0	10.5	6.0	6.0	2.0	1.5	1.0	0.0	0.0	0.0	0.5	0.5
18	11.0	11.0	6.0	6.0	1.5	1.5	0.0	0.0	0.0	0.0	0.5	0.0
19	11.0	11.0	6.0	6.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
20	11.0	10.5	6.0	6.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
21	10.5	10.0	6.0	6.0	1.5	1.5	0.0	0.0	0.0	0.0	0.5	0.0
22	10.0	10.0	6.0	6.0	1.5	1.5	0.0	0.0	0.0	0.0	0.5	0.5
23	10.0	10.0	6.0	6.0	1.5	1.0	0.0	0.0	0.5	0.0	0.5	0.0
24	10.0	10.0	6.0	5.5	1.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0
25	10.0	10.0	5.5	4.5	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.0
26	10.0	10.0	4.5	3.5	1.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0
27	10.0	10.0	3.5	3.5	0.5	0.5	0.0	0.0	0.0	0.0	1.0	0.5
28	10.0	10.0	3.5	3.0	1.0	0.5	0.0	0.0	0.0	0.0	1.0	0.0
29	10.0	10.0	3.0	3.0	1.0	1.0	0.0	0.0	---	---	0.0	0.0
30	10.5	10.0	3.0	3.0	1.0	0.5	0.0	0.0	---	---	---	---
31	10.5	10.5	---	---	0.5	0.5	0.0	0.0	---	---	---	---
MONTH	13.0	9.0	10.0	3.0	3.5	0.5	1.5	0.0	0.5	0.0	1.5	0.0

[illegible]

MISSOURI RIVER MAIN STEM

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06342500 MISSOURI RIVER AT BISMARCK, N. DAK.--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	12800	190	6570	32900	209	18600	25900	234	16400
2	21500	194	11300	30300	213	17400	24900	233	15700
3	19800	185	9890	28400	213	16300	25700	234	16200
4	27400	191	14100	28700	214	16600	28010	236	17800
5	29200	193	15200	29300	214	16900	27900	236	17800
6	28500	197	15200	27500	212	15700	27200	233	17100
7	27200	198	14500	27700	210	15700	27100	233	17000
8	28000	194	14700	27500	210	15600	27200	235	17300
9	27800	192	14400	27200	210	15400	26510	214	15300
10	28300	190	14500	25200	210	14300	28200	237	18000
11	28100	190	14400	22300	207	12500	27100	235	17200
12	28300	192	14700	24400	209	13800	27010	235	17100
13	29100	200	15700	26600	214	15400	27300	236	17400
14	30300	204	16700	27000	221	16100	27710	236	17700
15	31700	205	17500	25900	220	15400	27200	240	17600
16	32100	206	17900	27700	222	16600	25200	236	16100
17	32600	204	18000	26600	221	15900	26900	240	17400
18	32500	204	17900	23200	217	13600	28500	244	18800
19	32100	203	17600	25100	219	14800	26810	242	17500
20	32200	203	17600	25600	220	15200	26500	242	17300
21	32000	205	17700	26100	220	15500	27300	243	17900
22	32000	208	18000	26300	220	15600	26110	241	17000
23	31500	207	17600	25800	220	15300	22800	238	14700
24	32200	208	18100	25900	220	15400	24810	242	16200
25	32500	208	18300	24700	221	14700	26300	246	17500
26	32500	208	18300	24000	225	14600	21500	239	13900
27	33000	209	18600	25100	231	15700	23910	244	15700
28	31900	208	17900	25200	231	15700	25200	243	16500
29	32000	208	18000	24800	233	15600	22810	240	14800
30	32400	206	18000	25100	233	15800	19900	237	12700
31	32500	206	18100	---	---	---	24210	244	15900
MONTH	914000	---	496960	792100	---	465700	803600	---	515500

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	24500	244	16100	29500	60	4780	30000	60	4860
2	22800	242	14900	28500	60	4620	29500	65	5180
3	26500	246	17600	28300	60	4580	28000	65	4910
4	28200	248	18900	28600	60	4630	27000	65	4740
5	25600	243	16800	30800	60	4990	23000	70	4350
6	20900	220	12400	30800	60	4990	21000	70	3970
7	22200	210	12600	30900	60	5010	21000	70	3970
8	26400	200	14300	30700	60	4970	26000	80	5620
9	27500	180	13400	32300	65	5670	27500	80	5940
10	24100	140	9110	32800	65	5760	27000	80	5830
11	23000	80	4970	32300	65	5670	28000	80	6050
12	22000	60	3560	32700	65	5740	28500	80	6160
13	22000	60	3560	31800	65	5580	30010	70	5670
14	22500	55	3340	30400	60	4920	30500	70	5760
15	23000	50	3110	30500	60	4940	30500	70	5760
16	22000	45	2670	29000	60	4700	29000	80	6260
17	22500	45	2730	28000	60	4540	28000	80	6050
18	22000	45	2670	28000	60	4540	30000	80	6480
19	22000	45	2670	29000	60	4700	30500	70	5760
20	22500	45	2730	30000	60	4860	30500	70	5760
21	23000	45	2790	30500	60	4940	30000	80	6480
22	24000	50	3240	30500	60	4940	30500	80	6590
23	25000	50	3380	29500	60	4780	28000	80	6050
24	25500	50	3440	29500	60	4780	28500	80	6160
25	26000	55	3860	30000	60	4860	29000	80	6260
26	26500	55	3940	30500	60	4940	28500	80	6160
27	26500	55	3940	30000	60	4860	25000	90	6070
28	27000	55	4010	29500	60	4780	24000	90	5830
29	27500	55	4080	---	---	---	25000	90	6070
30	27700	55	4110	---	---	---	22500	80	4860
31	27700	55	4110	---	---	---	21500	80	4640
MONTH	758600	---	219020	844900	---	139070	848000	---	174250

MISSOURI RIVER MAIN STEM

06342500 MISSOURI RIVER AT BISMARCK, N. DAK.--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	21000	80	4540	33800	235	21400	39500	223	23800
2	22000	80	4750	34000	236	21700	39300	223	23700
3	22000	90	5350	32500	234	20500	39300	218	23100
4	23500	100	6340	28000	229	17300	39400	218	23200
5	22500	120	7290	23600	215	13700	39700	218	23400
6	22000	140	8320	25500	217	14900	41400	218	24400
7	21000	200	11300	27500	217	16100	41800	218	24600
8	21500	239	13900	28600	218	16800	42300	219	25000
9	21500	239	13900	32600	222	19500	42900	219	25400
10	21000	238	13500	36200	226	22100	43300	220	25700
11	21000	238	13500	38100	228	23500	42600	219	25200
12	21000	238	13500	37900	228	23300	42300	216	24700
13	20500	238	13200	36400	224	22000	42400	216	24700
14	21000	238	13500	33500	221	20000	42400	216	24700
15	20500	235	13000	32000	219	18900	42300	216	24700
16	20000	233	12600	32100	220	19100	42100	214	24300
17	19000	231	11900	32900	220	19500	42000	214	24300
18	20500	238	13200	37500	225	22800	41800	211	23800
19	23500	241	15300	39900	225	24200	41800	211	23800
20	25500	243	16700	40200	226	24500	41900	209	23600
21	26000	244	17100	40600	226	24800	41800	209	23600
22	24500	237	15700	39700	225	24100	42000	207	23500
23	27000	238	17400	40000	226	24400	41900	204	23100
24	27500	233	17300	39900	225	24200	41700	192	21600
25	25500	231	15900	39600	225	24100	43300	199	23300
26	23500	229	14500	39300	223	23700	47500	203	26000
27	23000	229	14200	39100	222	23400	52200	208	29300
28	21400	227	13100	39100	222	23400	54800	211	31200
29	22900	229	14200	39800	223	24000	54700	211	31200
30	27700	234	17500	39600	223	23800	55700	212	31900
31	---	---	---	39400	223	23700	---	---	---
MONTH	679500	---	382490	1098900	---	665400	1306100	---	750800

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	55500	216	32400	67400	216	39300	37000	187	18700
2	55900	217	32800	66500	216	38800	40200	191	20700
3	55300	216	32300	66700	217	39100	40000	193	20800
4	55100	216	32100	66600	216	38800	39800	193	20700
5	55200	216	32200	66500	216	38800	39600	192	20500
6	55100	216	32100	66700	217	39100	39300	192	20400
7	57100	218	33600	67400	217	39500	39600	192	20500
8	62100	221	37100	67400	215	39100	39600	167	17900
9	65000	224	39300	67100	215	39000	40400	193	21100
10	65500	225	39800	66800	214	38600	39900	193	20800
11	67300	222	40300	67300	215	39100	40600	193	21200
12	68600	223	41300	67400	215	39100	40600	193	21200
13	68800	223	41400	66800	214	38600	40500	193	21100
14	68600	223	41300	66800	214	38600	40600	193	21200
15	68700	223	41400	66900	217	39200	40700	194	21300
16	68600	223	41300	67100	217	39300	40600	191	20900
17	68600	223	41300	66700	219	39400	40700	189	20800
18	68400	223	41200	66500	219	39300	41100	194	21500
19	68000	223	40900	66400	219	39300	40800	196	21600
20	67400	222	40400	62700	215	36400	37800	193	19700
21	67200	219	39700	57500	209	32400	36800	192	19100
22	67600	220	40200	52300	204	28800	37800	193	19700
23	67800	220	40300	47400	198	25300	38600	187	19500
24	67000	219	39600	42900	194	22500	39600	195	20800
25	66700	219	39400	39400	190	20200	40000	195	21100
26	67100	219	39700	36200	191	18700	40000	195	21100
27	66600	219	39400	32400	187	16400	39500	195	20800
28	66500	219	39300	30500	180	14800	39900	195	21000
29	66600	219	39400	33200	183	16400	39800	195	21000
30	67000	217	39300	30000	180	14600	39500	197	21000
31	68000	218	40000	31700	182	15600	---	---	---
MONTH	2002900	---	1190800	1767200	---	1004100	1190900	---	617700
YEAR	13006700	---	6621790						

06349000 HEART RIVER NEAR MANDAN, N. DAK.

LOCATION.--Lat 46°50'02", long 100°58'27", in NW¼NE¼ sec.25, T.139 N., R.82 W., Morton County, on left bank near downstream wingwall of bridge on county highway, 3 mi (5 km) west of Mandan and 4 mi (6 km) downstream from Sweetbriar Creek.

DRAINAGE AREA.--3,310 mi² (8,570 km²), approximately.

PERIOD OF RECORD.--Chemical analyses: Water years 1946-50 (partial-record station), October 1971 to September 1972 (monthly).

Specific conductance: July 1972 to current year (weekly).

Water temperatures: July 1972 to current year (weekly).

Sediment records: May 1948 to current year.

EXTREMES.--Current year:

Sediment concentrations: Maximum daily, 3,460 mg/l Apr. 30; minimum daily 10 mg/l Apr. 5, 6.

Sediment discharge: Maximum daily, 76,600 tons Apr. 20; minimum daily 0.20 tons Feb. 17-26.

Period of record:

Sediment concentrations (1972-75): Maximum daily, 3,460 mg/l Apr. 30, 1975; minimum daily, 1 mg/l Feb. 6 to Mar. 10, 1972.

Sediment discharge (1972-75): Maximum daily, 76,600 tons Apr. 30, 1975; minimum daily, 0.03 tons Feb. 8 to Mar. 9, 1972.

REMARKS.--Sediment records from May 1948 to Sept. 1971 available from U.S. Corps of Engineers, Omaha, Neb.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SiO ₂) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO ₃) (MG/L)
OCT.										
24...	1615	37	--	--	--	--	--	--	--	--
NOV.										
27...	1435	36	--	--	--	--	--	--	--	--
DEC.										
30...	1245	21	--	--	--	--	--	--	--	--
JAN.										
27...	1530	4.6	--	--	--	--	--	--	--	--
FEB.										
27...	1710	2.9	--	--	--	--	--	--	--	--
MAR.										
18...	1515	55	--	--	--	--	--	--	--	--
APR.										
10...	1630	59	2.4	210	20	47	27	140	7.1	370
20...	1500	4460	--	--	--	--	--	--	--	--
22...	1530	4620	--	--	--	--	--	--	--	--
25...	1205	4840	--	--	--	--	--	--	--	--
MAY										
16...	1420	1640	--	--	--	--	--	--	--	--
JUNE										
30...	1600	243	--	--	--	--	--	--	--	--
JULY										
21...	1400	86	--	--	--	--	--	--	--	--
SEP.										
23...	1130	66	4.1	0	10	63	40	160	6.6	329

DATE	CARBONATE (CO ₃) (MG/L)	ALKALINITY AS CaCO ₃ (MG/L)	DIS-SOLVED SULFATE (SO ₄) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHOPHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)
OCT.									
24...	--	--	--	--	--	--	--	--	--
NOV.									
27...	--	--	--	--	--	--	--	--	--
DEC.									
30...	--	--	--	--	--	--	--	--	--
JAN.									
27...	--	--	--	--	--	--	--	--	--
FEB.									
27...	--	--	--	--	--	--	--	--	--
MAR.									
18...	--	--	--	--	--	--	--	--	--
APR.									
10...	0	304	230	6.7	.4	.23	.00	663	.90
20...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
MAY									
16...	--	--	--	--	--	--	--	--	--
JUNE									
30...	--	--	--	--	--	--	--	--	--
JULY									
21...	--	--	--	--	--	--	--	--	--
SEP.									
23...	0	270	360	11	.2	.56	.00	812	1.10

HEART RIVER BASIN

06349000 HEART RIVER NEAR MANDAN, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
OCT. 24...	--	--	--	--	--	1450	--	10.5	--
NOV. 27...	--	--	--	--	--	1800	--	.0	--
DEC. 30...	--	--	--	--	--	2350	--	.0	--
JAN. 27...	--	--	--	--	--	2900	--	.0	--
FEB. 27...	--	--	--	--	--	3500	--	.0	--
MAR. 18...	--	--	--	--	--	1200	--	.0	--
APR. 10...	106	230	0	56	4.0	1050	7.5	.5	670
20...	--	--	--	--	--	305	--	1.0	--
22...	--	--	--	--	--	345	--	4.0	--
25...	--	--	--	--	--	900	--	4.5	--
MAY 16...	--	--	--	--	--	680	--	16.0	--
JUNE 30...	--	--	--	--	--	980	--	26.0	--
JULY 21...	--	--	--	--	--	1280	--	26.0	--
SEP. 23...	146	320	52	51	3.9	1150	--	13.0	120

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT AND BED MATERIAL, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM
APR. 20...	1500	1400	16900	43	64	87	94
25...	1205	1940	25400	21	34	51	63
JUNE 30...	1600	84	55	--	--	--	--

DATE	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM
APR. 20...	100	--	--	--	--	--
25...	96	100	--	--	--	--
JUNE 30...	--	--	3	9	93	100

HEART RIVER BASIN

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06349000 HEART RIVER NEAR MANDAN, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHDS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	640	920	972	1040	---
2	---	---	---	---	2240	2600	---	710	---	---	---	1080
3	1570	---	---	1770	---	---	845	660	940	901	---	---
4	---	---	---	---	---	2580	---	650	---	763	964	---
5	---	---	---	---	---	---	---	665	---	---	---	1250
6	---	---	---	---	---	2590	850	770	995	911	---	---
7	---	---	---	---	2540	---	---	745	---	---	---	---
8	1570	---	---	---	---	2400	985	730	905	953	1060	---
9	---	---	---	1810	---	---	---	745	890	991	---	---
10	---	---	---	---	---	2350	955	720	---	---	---	1260
11	---	---	---	---	2430	---	---	745	1020	---	1120	---
12	---	---	---	---	---	---	---	---	1140	---	---	---
13	1550	---	---	---	2440	---	820	---	820	---	---	---
14	---	---	---	---	---	2690	810	690	780	---	1090	---
15	---	---	---	1900	---	---	---	675	---	---	---	1230
16	---	---	---	---	---	2060	569	670	880	1130	---	---
17	---	---	---	---	---	1550	506	659	890	---	---	---
18	1680	---	---	---	1750	1100	499	684	---	---	---	---
19	---	---	---	---	---	925	360	701	1070	---	1090	1160
20	---	---	---	1930	---	---	450	713	---	---	---	---
21	1580	---	---	---	---	---	435	730	985	---	---	---
22	---	---	---	---	1710	790	405	756	935	---	---	---
23	---	---	---	---	---	---	730	804	910	1180	---	1150
24	---	---	---	---	---	930	970	780	945	---	---	1170
25	---	---	---	2180	2260	---	965	810	---	---	---	---
26	---	---	---	---	---	---	960	830	---	---	1070	---
27	---	1750	---	2190	---	---	1280	820	1010	1200	---	1260
28	---	---	1700	2230	2240	---	995	930	---	---	---	---
29	---	---	---	---	---	810	730	910	1000	1080	---	---
30	---	---	1610	---	---	---	690	945	955	---	---	1200
31	---	---	1860	2210	---	820	---	920	---	1050	1020	---
MONTH	---	---	---	---	---	---	---	752	---	---	---	---

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	6.0	14.0	29.0	25.0	---
2	---	---	---	---	0.0	0.0	---	5.0	---	---	---	17.0
3	6.0	---	---	0.0	---	---	0.0	6.5	20.0	28.0	---	---
4	---	---	---	---	---	0.0	---	11.0	---	26.0	21.5	---
5	---	---	---	---	---	---	---	9.0	---	---	---	13.5
6	---	---	---	---	---	0.0	0.0	9.0	20.0	26.5	---	---
7	---	---	---	---	0.0	---	---	10.0	---	---	---	---
8	7.0	---	---	---	---	0.0	0.0	10.5	14.0	24.0	21.0	---
9	---	---	---	0.0	---	---	---	12.0	13.0	24.5	---	---
10	---	---	---	---	---	0.0	0.0	12.0	---	---	---	16.0
11	---	---	---	---	0.0	---	---	14.0	16.0	---	21.0	---
12	---	---	---	---	---	---	---	---	17.0	---	---	---
13	10.0	---	---	---	0.0	---	0.0	---	19.0	---	---	---
14	---	---	---	---	---	0.0	0.0	15.0	19.0	---	22.0	---
15	---	---	---	0.0	---	---	---	13.0	---	---	---	15.0
16	---	---	---	---	---	0.0	0.0	14.0	22.5	27.0	---	---
17	---	---	---	---	---	0.0	0.0	17.0	23.5	---	---	---
18	7.5	---	---	---	0.0	0.0	0.0	17.0	---	---	---	---
19	---	---	---	---	---	0.0	0.0	16.0	21.0	---	18.0	11.0
20	---	---	---	0.0	---	---	0.0	14.0	---	---	---	---
21	7.0	---	---	---	---	---	0.0	12.0	22.0	---	---	---
22	---	---	---	---	0.0	0.0	0.0	12.0	24.0	---	---	---
23	---	---	---	---	---	---	0.0	11.0	28.0	21.5	---	13.0
24	---	---	---	---	---	0.0	0.0	13.0	27.0	---	---	10.0
25	---	---	---	0.0	0.0	---	0.0	13.0	---	---	---	---
26	---	---	---	---	---	---	0.0	13.0	---	---	18.0	---
27	---	0.0	---	0.0	---	---	8.0	14.0	22.0	23.0	---	13.0
28	---	---	0.0	0.0	0.0	---	6.0	16.0	---	---	---	---
29	---	---	---	---	---	0.0	6.0	15.0	23.0	26.0	---	---
30	---	---	0.0	---	---	---	6.0	13.0	23.0	---	---	11.0
31	---	---	0.0	0.0	---	0.0	---	14.0	---	25.0	21.0	---
MONTH	---	---	---	---	---	---	---	12.5	---	---	---	---

HEART RIVER BASIN

06349000 HEART RIVER NEAR MANDAN, N. DAK.--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	34	32	2.9	34	90	8.3	30	30	2.4
2	35	35	3.3	35	92	8.7	30	30	2.4
3	35	28	2.6	40	104	11	30	30	2.4
4	35	26	2.5	42	106	12	30	30	2.4
5	36	29	2.8	42	104	12	30	35	2.8
6	37	31	3.1	37	98	9.8	28	35	2.6
7	38	31	3.2	33	91	8.1	28	35	2.6
8	34	29	2.7	32	82	7.1	28	35	2.6
9	30	27	2.2	29	72	5.6	28	40	3.0
10	27	27	2.0	28	62	4.7	28	40	3.0
11	26	27	1.9	27	53	3.9	26	40	2.8
12	26	27	1.9	26	47	3.3	26	45	3.2
13	26	32	2.2	26	45	3.2	26	45	3.2
14	28	40	3.0	26	45	3.2	26	45	3.2
15	28	37	2.8	26	45	3.2	26	50	3.5
16	30	42	3.4	28	45	3.4	24	50	3.2
17	30	38	3.1	28	45	3.4	24	55	3.6
18	30	26	2.1	28	40	3.0	24	55	3.6
19	32	20	1.7	28	40	3.0	24	60	3.9
20	32	25	2.2	28	40	3.0	24	60	3.9
21	34	33	3.0	30	40	3.2	22	60	3.6
22	34	28	2.6	30	35	2.8	22	60	3.6
23	36	22	2.1	30	35	2.8	22	60	3.6
24	36	15	1.5	30	32	2.6	22	60	3.6
25	35	49	4.6	30	32	2.6	22	60	3.6
26	34	51	4.7	32	32	2.8	20	60	3.2
27	34	52	4.8	32	32	2.8	20	60	3.2
28	33	54	4.8	32	32	2.8	20	60	3.2
29	30	60	4.9	32	30	2.6	20	55	3.0
30	28	70	5.3	32	30	2.6	20	55	3.0
31	29	80	6.3	---	---	---	20	50	2.7
MONTH	992	---	---	933	---	---	770	---	---

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	18	55	2.7	4.0	35	.38	4.0	50	.54
2	18	60	2.9	4.0	35	.38	4.0	50	.54
3	18	65	3.2	4.0	35	.38	4.0	50	.54
4	16	65	2.8	4.0	35	.38	4.0	55	.59
5	16	60	2.6	4.0	35	.38	5.0	55	.74
6	16	55	2.4	4.0	35	.38	5.0	60	.81
7	16	55	2.4	4.0	35	.38	5.0	60	.81
8	14	50	1.9	4.0	35	.38	5.0	60	.81
9	14	50	1.9	3.5	35	.33	5.0	60	.81
10	12	50	1.6	3.5	30	.28	5.0	60	.81
11	10	50	1.4	3.5	30	.28	5.0	55	.74
12	8.0	45	.97	3.5	30	.28	5.0	55	.74
13	6.0	45	.73	3.5	30	.28	6.0	60	.97
14	5.0	45	.61	3.5	30	.28	7.0	65	1.2
15	5.0	45	.61	3.0	30	.24	8.0	70	1.5
16	5.0	45	.61	3.0	30	.24	15	80	3.2
17	5.0	45	.61	3.0	25	.20	60	50	8.1
18	5.0	45	.61	3.0	25	.20	70	40	7.6
19	5.0	45	.61	3.0	25	.20	50	30	4.9
20	5.0	45	.61	3.0	25	.20	50	25	3.4
21	4.5	45	.55	3.0	25	.20	50	25	3.4
22	4.5	45	.55	3.0	25	.20	45	25	3.0
23	4.5	45	.55	3.0	25	.20	45	30	3.6
24	4.5	45	.55	3.0	25	.20	40	40	4.3
25	4.5	45	.55	3.0	25	.20	35	40	3.8
26	4.5	40	.49	3.0	25	.20	35	35	3.3
27	4.5	40	.49	3.5	40	.38	35	30	2.8
28	4.5	40	.49	4.0	50	.54	35	25	2.4
29	4.5	40	.49	---	---	---	35	20	1.9
30	4.5	40	.49	---	---	---	35	18	1.7
31	4.5	40	.49	---	---	---	30	18	1.5
MONTH	266.5	---	---	96.5	---	---	752.0	---	---

06349000 HEART RIVER NEAR MANDAN, N. DAK.--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	30	16	1.3	6600	2730	48600	309	78	65
2	25	14	.95	5000	2100	28400	282	63	48
3	25	12	.81	4400	1880	22300	252	61	42
4	25	12	.81	4100	1330	14700	235	65	41
5	25	10	.68	3800	1180	12100	218	54	32
6	25	10	.68	3600	1280	12400	198	48	26
7	30	12	.97	3000	1290	10400	198	47	25
8	40	14	1.5	2400	1160	7520	245	196	130
9	50	16	2.2	2120	1160	6640	285	217	167
10	60	20	3.2	1970	1270	6760	315	106	90
11	70	20	3.8	2130	1100	6330	568	491	886
12	80	20	4.3	2400	920	5960	1000	720	1940
13	100	20	5.4	2580	810	5640	576	680	1060
14	110	20	5.9	2410	1150	7480	471	425	540
15	200	40	22	2180	1040	6120	436	290	341
16	400	50	54	2000	800	4320	429	187	217
17	1000	270	729	1740	680	3190	506	225	307
18	3000	1600	13000	1480	530	2120	600	350	567
19	3600	800	7780	1230	355	1180	592	300	480
20	4400	1900	22600	1030	365	1020	548	235	348
21	4200	2760	31300	854	315	726	740	260	519
22	4500	2640	32100	724	270	528	1060	410	1170
23	5300	2820	40400	676	630	1150	868	500	1170
24	5400	2300	33500	612	280	463	656	400	708
25	4800	1900	24600	604	225	367	506	265	362
26	4700	1660	21100	588	215	341	408	170	187
27	4400	1700	20200	608	205	337	342	122	113
28	5200	2070	29100	506	205	280	306	101	83
29	7300	3080	60700	429	162	188	270	88	64
30	8200	3460	76600	380	126	129	248	86	58
31	---	---	---	339	107	98	---	---	---
MONTH	67295	---	---	62490	---	---	13667	---	---

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	242	71	46	195	36	19	71	41	7.9
2	387	120	151	208	40	22	70	41	7.7
3	560	305	461	178	36	17	70	37	7.0
4	345	550	512	160	23	9.9	66	33	5.9
5	285	310	239	148	19	7.6	61	32	5.3
6	248	145	97	132	21	7.5	58	33	5.2
7	240	104	67	135	33	12	60	34	5.5
8	285	112	86	140	49	19	60	35	5.7
9	306	135	112	152	51	21	61	41	6.8
10	306	160	132	142	47	18	62	45	7.5
11	276	154	115	155	39	16	60	43	7.0
12	232	118	74	178	46	22	58	46	7.2
13	205	83	46	165	41	18	60	56	9.1
14	180	70	34	172	39	18	57	70	11
15	155	71	30	150	50	20	57	78	12
16	135	72	26	101	47	13	57	73	11
17	125	73	25	90	45	11	57	62	9.5
18	103	74	21	86	44	10	61	47	7.7
19	92	76	19	88	43	10	66	32	5.7
20	86	77	18	92	45	11	67	28	5.1
21	82	78	17	110	52	15	67	29	5.2
22	79	87	19	128	58	20	68	31	5.7
23	86	88	20	88	50	12	66	32	5.7
24	70	91	17	79	47	10	58	29	4.5
25	61	82	14	74	48	9.6	53	27	3.9
26	53	104	15	108	62	18	52	22	3.1
27	162	86	38	152	67	27	55	17	2.5
28	170	52	24	120	54	17	57	25	3.8
29	170	45	21	99	46	12	58	48	7.5
30	175	54	26	84	41	9.3	57	69	11
31	190	36	18	78	42	8.8	---	---	---
MONTH	6091	---	---	3987	---	---	1830	---	---

YEAR 159170.0

647050.9

APPLE CREEK BASIN

06349500 APPLE CREEK NEAR MENOKEN, N. DAK.

LOCATION.--Lat 46°47'40", long 100°39'25", in NW¼NE¼ sec.9, T.138 N., R.79 W., Burleigh County, on left bank 75 ft (23 m) downstream from bridge on county highway, 4 mi (6 km) upstream from Hay Creek, 6.3 mi (10.1 km) west of Menoken, and 6.4 mi (10.3 km) east of Bismarck.

DRAINAGE AREA.--1,680 mi² (4,350 km²), approximately, of which about 500 mi² (1,300 km²) is probably non-contributing.

PERIOD OF RECORD.--Chemical analyses: September 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)
NOV.										
18...	1400	.24	13	210	80	76	34	320	8.1	830
DEC.										
23...	1430	1.2	6.9	80	220	56	44	320	7.9	830
JAN.										
28...	1500	.50	18	20	1000	97	36	360	8.5	938
FEB.										
26...	1620	.25	18	380	1100	77	53	370	8.0	1000
MAR.										
18...	1120	4.1	20	530	240	69	43	270	7.5	762
21...	1430	5.3	--	--	--	--	--	--	--	--
APR.										
14...	1005	55.8	--	--	--	--	--	--	--	--
16...	1430	46	--	--	--	--	--	--	--	--
18...	1025	279	--	--	--	--	--	--	--	--
22...	1200	627	2.0	340	140	15	7.9	16	4.7	80
24...	1035	259	--	--	--	--	--	--	--	--
JULY										
25...	0930	5.8	11	170	180	47	32	200	7.5	591
AUG.										
23...	1000	.82	15	370	160	52	32	230	7.1	660
SEP.										
23...	1655	.29	15	80	100	54	35	280	6.8	726

DATE	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CaCO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
NOV.									
18...	0	681	290	51	.9	.36	.36	1210	1.65
DEC.									
23...	0	681	290	50	.9	.77	.30	1230	1.67
JAN.									
28...	0	769	310	71	1.5	1.2	.61	1390	1.89
FEB.									
26...	0	820	320	64	.6	.56	.59	1440	1.96
MAR.									
18...	0	625	240	45	.5	1.7	.36	1090	1.48
21...	--	--	--	--	--	--	--	--	--
APR.									
14...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
22...	0	66	38	2.5	.0	.52	.06	152	.21
24...	--	--	--	--	--	--	--	--	--
JULY									
25...	0	485	200	13	.1	.47	.52	804	1.09
AUG.									
23...	0	541	190	26	.2	.52	.59	882	1.20
SEP.									
23...	0	596	220	41	.3	.99	.56	1030	1.40

E - Estimated.

APPLE CREEK BASIN

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06349500 APPLE CREEK NEAR MENOKEN, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
NOV. 18...	.78	330	0	67	7.7	1950	8.1	4.0	1400
DEC. 23...	3.99	320	0	68	7.8	1950	8.0	.0	940
JAN. 28...	1.88	390	0	66	7.9	2040	7.8	.0	1500
FEB. 26...	.97	410	0	66	7.9	2120	7.8	.0	1700
MAR. 18...	12.1	350	0	62	6.3	1650	7.7	.0	1100
21...	--	--	--	--	--	1180	--	.5	--
APR. 14...	--	--	--	--	--	860	--	.0	--
16...	--	--	--	--	--	670	--	.0	--
18...	--	--	--	--	--	245	--	.0	--
22...	257	70	4	31	.8	220	7.8	3.0	40
24...	--	--	--	--	--	290	--	6.5	--
JULY 25...	12.6	250	0	63	5.5	1240	8.1	22.5	680
AUG. 23...	1.95	260	0	65	6.2	1000	--	19.0	560
SEP. 23...	.81	280	0	68	7.3	1500	8.1	17.5	1000

MISSOURI RIVER MAIN STEM

06349700 MISSOURI RIVER NEAR SCHMIDT, N. DAK.

LOCATION.--Lat 46°39'22", long 100°44'18", in SW¼NE¼ sec.26, T.137 N., R.80 W., Morton County, temperature recorder at gaging station, on right bank 2 mi (3.2 km) southeast of railroad siding at Schmidt, and 13 mi (21 km) south of Mandan at mile 1,298 (kilometre 2,088).

DRAINAGE AREA.--191,700 mi² (496,500 km²).

PERIOD OF RECORD.--Chemical analyses: March 1974 to current year.
Water temperatures: June 1967 to current year.

EXTREMES.--Current year:
Water temperatures: Maximum, 18.5°C Aug. 28-30; minimum, freezing point on many days during December to March.

Period of record:
Water temperatures: Maximum, 22.0°C July 12, 13, 1968; minimum, freezing point on many days during winter months.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL ALUM- INUM (AL) (UG/L)	SUS- PENDE ALUM- INUM (AL) (UG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDE MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.											
09...	1215	E29000	7.6	--	--	--	--	--	--	--	--
22...	1115	E29000	--	--	--	--	--	--	--	--	--
NOV.											
05...	1215	E25000	--	--	--	--	--	--	--	--	--
26...	1230	E25000	--	--	--	--	--	--	--	--	--
DEC.											
09...	1145	E29000	--	--	--	--	--	--	--	--	--
26...	1245	E25000	--	--	--	--	--	--	--	--	--
JAN.											
13...	1045	E19000	--	--	--	--	--	--	--	--	--
29...	1230	E25000	8.2	--	--	--	--	--	--	--	--
FEB.											
10...	1130	E30000	--	--	--	--	--	--	--	--	--
24...	1230	E29500	--	--	--	--	--	--	--	--	--
MAR.											
11...	1200	O30000	--	--	--	--	--	--	--	--	--
APR.											
01...	1115	E30000	--	--	--	--	--	--	--	--	--
28...	1130	21000	6.4	--	--	--	--	--	--	--	--
MAY											
09...	1045	E25000	--	--	--	--	--	--	--	--	--
22...	1000	E36000	--	--	--	--	--	--	--	--	--
JUNE											
05...	1330	38000	7.3	670	660	10	1000	20	20	20	0
24...	1220	42000	--	--	--	--	--	--	--	--	--
JULY											
03...	1100	50000	7.3	--	--	--	--	--	--	--	--
16...	1015	69700	--	--	--	--	--	--	--	--	--
31...	1330	066000	7.2	--	--	--	--	--	--	--	--
AUG.											
12...	1530	67400	--	--	--	--	--	--	--	--	--
21...	1300	57500	--	--	--	--	--	--	--	--	--
SEP.											
08...	1500	39600	6.9	--	--	--	--	--	--	--	--
23...	1115	E37000	--	--	--	--	--	--	--	--	--

E - Estimated.

MISSOURI RIVER MAIN STEM

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06349700 MISSOURI RIVER NEAR SCHMIDT, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS-SOLVED CAL- CIUM (CA) (MG/L)	DIS-SOLVED MAG- NE- SIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)	ALKA- LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO- RIDE (CL) (MG/L)	DIS-SOLVED FLUO- RIDE (F) (MG/L)	BROMIDE (BR) (MG/L)
OCT.										
09...	53	23	62	4.3	2	159	180	11	--	--
22...	--	--	--	--	--	--	--	--	--	--
NOV.										
05...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
DEC.										
09...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
JAN.										
13...	--	--	--	--	--	--	--	--	--	--
29...	54	19	60	4.2	--	159	180	11	--	--
FEB.										
10...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
MAR.										
11...	--	--	--	--	--	--	--	--	--	--
APR.										
01...	--	--	--	--	--	--	--	--	--	--
28...	46	21	70	5.5	0	158	180	9.1	--	--
MAY										
09...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
JUNE										
05...	52	21	55	4.2	0	155	160	8.4	.5	.1
24...	--	--	--	--	--	--	--	--	--	--
JULY										
03...	50	19	56	4.2	0	149	170	8.4	.6	.1
16...	--	--	--	--	--	--	--	--	--	--
31...	51	18	56	4.1	0	148	170	9.2	.5	.0
AUG.										
12...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
SEP.										
08...	50	20	58	4.2	0	150	170	7.4	.5	.1
23...	--	--	--	--	--	--	--	--	--	--

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS-SOLVED ORTHO. PHOS- PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)
OCT.										
09...	.09	.01	.32	.33	.42	.03	--	450	.61	35200
22...	.07	.26	.06	.32	.39	.05	--	444	.60	34800
NOV.										
05...	.09	.01	.31	.32	.41	.07	--	444	.60	30000
26...	.13	.03	.43	.46	.59	.16	--	443	.60	29900
DEC.										
09...	.11	.03	.15	.18	.29	.02	--	426	.58	33400
26...	.14	.05	.12	.17	.31	.05	--	426	.58	28800
JAN.										
13...	.08	.03	.61	.64	.72	.08	--	471	.64	24200
29...	.13	.01	.38	.39	.52	.07	--	437	.59	29500
FEB.										
10...	.09	.02	.31	.33	.42	.09	--	432	.59	35000
24...	.12	.01	.20	.21	.33	.00	--	441	.60	35100
MAR.										
11...	.14	.03	.22	.25	.39	.02	--	424	.58	34300
APR.										
01...	.11	.01	.13	.14	.25	.01	--	423	.58	34300
28...	.32	.11	1.7	1.8	2.1	.02	--	434	.59	24600
MAY										
09...	.17	.04	.51	.55	.72	.06	--	430	.58	29000
22...	.11	.01	.64	.65	.76	.03	--	441	.60	42900
JUNE										
05...	.08	.02	.62	.64	.72	.10	.02	417	.57	42800
24...	.17	.03	.35	.38	.55	.02	--	425	.58	48200
JULY										
03...	.12	.01	.46	.47	.59	.06	.00	407	.55	54900
16...	.11	.00	.38	.38	.49	.06	--	411	.56	77300
31...	.12	.00	.30	.30	.42	.08	.00	412	.56	73400
AUG.										
12...	.15	.07	.36	.43	.58	.03	--	414	.56	75300
21...	--	--	--	--	--	--	--	--	--	--
SEP.										
08...	.17	.00	.25	.25	.42	.13	.00	411	.56	33300
23...	.14	.00	.32	.32	.46	.03	--	--	--	--

MISSOURI RIVER MAIN STEM

06349700 MISSOURI RIVER NEAR SCHMIDT, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	SUS- PENDE D SOLIDS (MG/L)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)
OCT.										
09...	23	230	68	37	1.8	695	8.8	12.5	7	9.2
22...	48	--	--	--	--	685	8.7	10.0	10	9.5
NOV.										
05...	50	--	--	--	--	695	8.5	7.5	--	10.2
26...	41	--	--	--	--	680	8.3	2.5	8	11.8
DEC.										
09...	27	--	--	--	--	695	8.2	1.5	6	12.2
26...	11	--	--	--	--	670	8.8	.0	5	12.6
JAN.										
13...	4	--	--	--	--	610	8.3	.0	10	13.6
29...	29	210	54	37	1.8	680	8.3	.0	9	12.0
FEB.										
10...	164	--	--	--	--	675	8.4	.0	30	12.6
24...	9	--	--	--	--	--	8.0	.5	3	11.0
MAR.										
11...	2	--	--	--	--	--	8.4	.0	4	11.8
APR.										
01...	6	--	--	--	--	655	8.0	.0	2	12.0
28...	588	200	43	42	2.1	750	7.7	6.0	160	10.2
MAY										
09...	136	--	--	--	--	670	8.2	7.0	25	11.2
22...	80	--	--	--	--	660	8.2	7.0	15	11.0
JUNE										
05...	144	220	62	35	1.6	660	8.2	11.0	15	10.0
24...	48	--	--	--	--	670	8.2	15.0	15	9.6
JULY										
03...	--	200	54	37	1.7	650	8.2	13.0	20	8.8
16...	8	--	--	--	--	660	8.4	14.5	15	9.2
31...	--	200	54	37	1.7	650	8.0	16.0	20	8.6
AUG.										
12...	--	--	--	--	--	650	8.1	16.0	10	9.0
21...	--	--	--	--	--	--	--	--	--	--
SEP.										
08...	--	210	57	37	1.8	650	8.2	15.5	1	8.7
23...	56	--	--	--	--	650	8.2	15.5	15	8.8

DATE	PER- CENT SATUR- ATION	CHEM- ICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	TOTAL ORGANIC CARBON (C) (MG/L)	DIS- SOL- VED ORGANIC CARBON (C) (MG/L)	SUS- PENDE D ORGANIC CARBON (C) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS- PENDE D ARSENIC (AS) (UG/L)
OCT.										
09...	91	7	--	118	B10	6.3	--	--	--	--
22...	94	15	--	B380	75	5.8	--	--	--	--
NOV.										
05...	90	5	--	--	--	3.6	--	--	--	--
26...	91	6	--	B320	94	4.6	--	--	--	--
DEC.										
09...	118	9	--	B139	B29	3.8	--	--	--	--
26...	92	11	--	B234	61	3.9	--	--	--	--
JAN.										
13...	99	12	--	151	<1	4.8	--	--	--	--
29...	87	6	--	200	B15	--	--	--	--	--
FEB.										
10...	92	16	--	147	B13	4.8	--	--	--	--
24...	81	5	--	B16	<1	4.2	--	--	--	--
MAR.										
11...	86	11	--	B3	B6	5.2	--	--	--	--
APR.										
01...	87	4	--	325	B7	4.7	--	--	--	--
28...	87	54	--	E1	690	20	--	--	--	--
MAY										
09...	97	14	--	260	B18	4.5	--	--	--	--
22...	96	11	--	770	100	4.8	--	--	--	--
JUNE										
05...	96	11	1.2	260	58	--	8.3	.6	5	3
24...	100	10	--	200	50	2.0	--	--	--	--
JULY										
03...	88	15	.4	300	B26	--	3.3	1.0	--	--
16...	95	10	--	29	26	5.1	--	--	--	--
31...	92	12	.7	B92	68	--	3.9	1.2	--	--
AUG.										
12...	96	13	--	B120	B10	5.0	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
SEP.										
08...	94	5	1.3	3100	40	--	6.5	.2	--	--
23...	95	10	--	B620	58	5.4	--	--	--	--

E - Estimated.

B - Results based on colony count outside the acceptable range.

MISSOURI RIVER MAIN STEM

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06349700 MISSOURI RIVER NEAR SCHMIDT, N. DAK.--Continued
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	SUS- PENDE D BARIUM (BA) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	TOTAL BERYL- LIUM (BE) (UG/L)	SUS- PENDE D BERYL- LIUM (BE) (UG/L)	DIS- SOLVED BERYL- LIUM (BE) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	SUS- PENDE D CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)
JUNE 05...	2	0	0	0	0	0	0	<10	<9	1	0

DATE	SUS- PENDE D CHRO- MIUM (CR) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	SUS- PENDE D COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	SUS- PENDE D LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL LITHIUM (LI) (UG/L)	SUS- PENDE D LITHIUM (LI) (UG/L)
JUNE 05...	0	0	<10	<8	2	<100	<97	3	30	0

DATE	DIS- SOLVED LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	SUS- PENDE D MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB- DENUM (MO) (UG/L)	SUS- PENDE D MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)	SUS- PENDE D NICKEL (NI) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)
JUNE 05...	40	.0	.0	.0	3	0	3	<50	<47	3

DATE	TOTAL SELE- NIUM (SE) (UG/L)	SUS- PENDE D SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL STRON- TIUM (SR) (UG/L)	SUS- PENDE D STRON- TIUM (SR) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)	SUS- PENDE D ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
JUNE 05...	1	0	1	590	80	510	.0	30	30	0

SUSPENDED SEDIMENT DISCHARGE MEASUREMENTS AND PARTICLE-SIZE DISTRIBUTION OF BED MATERIAL
WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDE D SEDI- MENT (MG/L)	SUS- PENDE D SEDI- MENT DIS- CHARGE (T/DAY)	RED MAT. FALL DIAM. % FINER THAN .062 MM	RED MAT. FALL DIAM. % FINER THAN .125 MM	RED MAT. FALL DIAM. % FINER THAN .250 MM	RED MAT. FALL DIAM. % FINER THAN .500 MM	RED MAT. FALL DIAM. % FINER THAN 1.00 MM	RED MAT. FALL DIAM. % FINER THAN 2.00 MM	RED MAT. FALL DIAM. % FINER THAN 4.00 MM
AUG. 12...	1530	157	28600	--	--	--	--	--	--	--
SEP. 21...	1300	--	--	1	2	69	97	99	99	100
OR...	1500	134	14300	--	--	--	--	--	--	--

06349700 MISSOURI RIVER NEAR SCHMIDT, N. DAK.--Continued

BIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

PHYTOPLANKTON

<u>DATE</u>	<u>TOTAL COUNT CELLS/ML</u>	<u>DOMINANT GENERA</u>	<u>PERCENT COMPOSITION</u>	<u>ALGAL GROUP</u>
750605	460	<u>Cyclotella</u>	50	Diatom
750608	510	<u>Nitzschia</u> <u>Oscillatoria</u>	27 45	Diatom Blue-Green
750731	240	<u>Diatoma</u> <u>Fragilaria</u> <u>Nitzschia</u>	21 47 16	Diatom Diatom Diatom
750803	1,700	<u>Fragilaria</u> <u>Cyclotella</u>	38 18	Diatom Diatom

PERIPHYTON

Collected by plastic strips samplers placed in the stream approximately one month prior to collection date.

<u>DATE</u>	<u>DRY WEIGHT G/M²</u>	<u>ASH WEIGHT G/M²</u>	<u>CHLOROPHYLL A G/M²</u>	<u>CHLOROPHYLL B G/M²</u>
741003	54	55	9.4	0.4

MISSOURI RIVER MAIN STEM

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06349700 MISSOURI RIVER NEAR SCHMIDT, N. DAK.--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

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

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

CANNONBALL RIVER BASIN

06349930 COAL BANK CREEK NEAR HAVELOCK, N. DAK.

LOCATION.--Lat 46°27'50", long 102°44'20", in NW¼SW¼, sec.34, T.135 N., R.96 W., Hettinger County, at county highway bridge 1 mile (1.6 km) south of Havelock.

PERIOD OF RECORD.--Chemical analyses: October 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL ALUM- INUM (AL) (UG/L)	SUS- PENDED ALUM- INUM (AL) (UG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)
OCT.												
04...	1250	.05	.3	300	280	20	120	50	30	0	30	31
NOV.												
07...	1340	.06	4.8	--	--	--	--	--	--	--	--	87
DEC.												
03...	1330	.05	7.2	--	--	--	--	--	--	--	--	120
JAN.												
06...	1235	.10	9.6	600	600	0	880	70	230	20	210	160
APR.												
21...	1255	230	9.3	9700	9700	50	13000	60	390	250	140	33
MAY												
06...	1500	5.6	9.5	--	--	--	--	--	--	--	--	82
JUNE												
02...	1250	1.5	5.7	250	240	<10	670	60	200	20	180	160
JULY												
07...	1440	2.3	4.5	--	--	--	--	--	--	--	--	160
AUG.												
04...	1435	.08	1.1	--	--	--	--	--	--	--	--	90
SEP.												
02...	1355	.07	.1	290	290	0	430	40	130	100	30	100
29...	1330	.20	1.8	--	--	--	--	210	--	--	400	140

DATE	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLOR- IDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	BROMIDE (BR) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)
OCT.												
04...	71	340	7.8	29	306	770	11	.3	--	.05	--	--
NOV.												
07...	71	320	5.9	--	354	760	12	.3	--	.09	--	--
DEC.												
03...	100	350	11	--	505	940	13	.3	--	.07	--	--
JAN.												
06...	84	290	9.8	--	547	820	11	.3	--	.01	--	--
APR.												
21...	20	53	8.7	0	75	190	4.1	.1	.1	3.8	.31	2.7
MAY												
06...	47	120	8.0	0	153	470	6.4	.1	.1	.98	.11	.85
JUNE												
02...	83	260	9.5	0	325	990	11	.2	.1	.00	.01	.99
JULY												
07...	120	330	12	0	225	1300	12	.3	.1	1.2	.04	1.1
AUG.												
04...	68	280	9.5	0	339	770	9.9	.4	.1	.01	.00	1.0
SEP.												
02...	83	280	9.6	0	337	800	11	.3	.1	.00	.00	.76
29...	100	290	8.1	0	353	1000	21	.2	.1	1.2	.50	2.3

DATE	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHOPHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	TOTAL FILT- RABLE RESIDUE (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM
OCT.												
04...	.90	.95	.04	--	1500	1600	2.04	.20	3	370	64	66
NOV.												
07...	.92	1.0	.06	--	1660	--	2.26	.27	--	510	160	57
DEC.												
03...	1.1	1.2	.05	--	1960	--	2.67	.26	--	710	210	51
JAN.												
06...	.53	.54	.04	--	1810	--	2.46	.49	--	750	200	45
APR.												
21...	3.0	6.8	.47	.10	402	--	.55	250	--	170	90	40
MAY												
06...	.96	1.9	.13	.03	888	--	1.21	13.4	--	400	240	39
JUNE												
02...	1.0	1.0	.02	.01	1860	--	2.53	7.53	--	740	420	43
JULY												
07...	1.1	2.3	.01	.01	2250	--	3.06	14.0	--	890	670	44
AUG.												
04...	1.0	1.0	.06	.00	1520	--	2.07	.33	--	500	170	54
SEP.												
02...	.76	.76	.03	.00	1570	--	2.14	.30	--	590	260	50
29...	2.8	4.0	.03	.01	1910	--	2.60	1.03	--	760	410	45

CANNONBALL RIVER BASIN

06349930 COAL BANK CREEK NEAR HAVELOCK, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TOTAL LITHIUM (LI) (UG/L)	SUS-PENDED LITHIUM (LI) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	SUS-PENDED MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB-DENUM (MO) (UG/L)	SUS-PENDED MOLYB-DENUM (MO) (UG/L)	DIS-SOLVED MOLYB-DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)
OCT. 04...	60	0	60	.2	.0	.2	1	0	1	<50
JAN. 06...	60	0	70	.0	.0	.0	1	1	0	50
APR. 21...	20	0	20	.1	.1	.0	0	0	0	<50
MAY 06...	--	--	--	--	--	--	--	--	--	--
JUNE 02...	30	0	30	.6	.4	.2	2	0	2	<50
SEP. 02...	50	0	50	.5	.0	.5	1	0	2	<50
29...	--	--	--	--	--	--	--	--	--	--

DATE	SUS-PENDED NICKEL (NI) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	SUS-PENDED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL STRON-TIUM (SR) (UG/L)	SUS-PENDED STRON-TIUM (SR) (UG/L)	DIS-SOLVED STRON-TIUM (SR) (UG/L)	DIS-SOLVED VANA-DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)
OCT. 04...	<38	12	0	0	0	--	--	--	.6	30
JAN. 06...	38	12	--	--	3	--	--	--	.0	--
APR. 21...	<48	2	1	0	1	290	0	300	3.8	120
MAY 06...	--	--	--	--	--	--	--	--	--	--
JUNE 02...	<45	5	2	0	2	1600	300	1300	.0	--
SEP. 02...	<46	4	1	0	1	1900	0	2100	.5	60
29...	--	--	--	--	--	--	--	--	--	--

DATE	SUS-PENDED ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS CS-137 (PC/L)	SUS-PENDED GROSS BETA AS CS-137 (PC/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED GROSS RA-226 (RADON METHOD) (PC/L)	DIS-SOLVED NATURAL URANIUM (U) (UG/L)
OCT. 04...	30	0	<13	<.4	11	.5	9.3	.5	.03	1.4
APR. 21...	80	40	--	--	--	--	--	--	--	--
SEP. 02...	20	40	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--

SUSPENDED SEDIMENT DISCHARGE MEASUREMENTS AND PARTICLE-SIZE DISTRIBUTION OF BED MATERIAL
WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS-PENDED SEDIMENT (MG/L)	SUS-PENDED SEDIMENT DISCHARGE (T/DAY)	SED. MAT. FALL DIAM. % FINER THAN .004 MM	SED. MAT. FALL DIAM. % FINER THAN .062 MM	SED. MAT. FALL DIAM. % FINER THAN .125 MM	SED. MAT. FALL DIAM. % FINER THAN .250 MM	SED. MAT. FALL DIAM. % FINER THAN .500 MM	SED. MAT. FALL DIAM. % FINER THAN 1.00 MM
JAN. 06...	1235	--	--	20	48	63	86	94	100
MAY 06...	1500	156	2.4	--	--	--	--	--	--
JULY 07...	1440	6	.04	--	--	--	--	--	--
AUG. 06...	1435	36	.01	--	--	--	--	--	--
SEP. 02...	1355	6	.00	--	--	--	--	--	--
29...	1330	8	.00	--	--	--	--	--	--

CANNONBALL RIVER BASIN

329

06354000 CANNONBALL RIVER AT BREIEN, N. DAK.
(National Water-Quality Accounting Network Station)

LOCATION.--Lat 46°22'33", long 100°56'03", in sec.36, T.134 N., R.82 W., Morton County, at gaging station on left bank 50 ft (15 m) north of bridge on State Highway 6, 1,500 ft (457 m) downstream from Louise Creek, and 0.6 mi (1.0 km) south of Breien.

DRAINAGE AREA.--4,100 mi² (10,620 km²), approximately.

PERIOD OF RECORD.--Chemical analyses: Water years 1946-50 (partial-record station), October 1970 to September 1972 and October 1974 to current year (monthly).

Specific conductance: October 1974 to current year; July 1972 to September 1974 (weekly).

Water temperatures: October 1974 to current year; July 1972 to September 1974 (weekly).

Sediment records: May 1948 to September 1951, July 1959 to current year.

EXTREMES.--Current year:

Specific conductance: Maximum daily, 3,800 micromhos Jan. 24; minimum daily, 308 micromhos Apr. 17.

Water temperatures: Maximum daily, 27.0°C July 5, 17; minimum daily, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 4,730 mg/l May 11; minimum 22 mg/l Sept. 14.

Sediment discharge: Maximum daily, 76,000 tons May 11; minimum daily 0 tons Oct. 1.

Period of record:

Sediment concentrations (1972-75): Maximum daily, 7,200 mg/l Sept. 4, 1973; minimum daily, 10 mg/l on several days in 1972 and 1974.

Sediment discharge (1972-75): Maximum daily, 172,000 tons Mar. 15, 1972; minimum daily, 0 tons Aug. 29 to Oct. 1, 1974.

REMARKS.--Sediment records from May 1948 to September 1951, July 1959 to September 1971 are available from U.S. Corps of Engineers, Omaha, Neb.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDE D MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
OCT.												
23...	1245	.50	4.4	780	570	120	110	10	33	34	420	9.8
NOV.												
25...	1240	14	4.7	--	--	--	--	--	82	81	500	15
DEC.												
23...	1330	9.6	8.0	--	--	--	--	--	82	100	590	9.9
JAN.												
24...	1245	2.5	10	260	20	110	0	120	120	99	630	13
FEB.												
25...	1230	.94	10	--	--	--	--	--	100	70	490	11
MAR.												
15...	1040	10	--	--	--	--	--	--	--	--	--	--
19...	1605	283	--	--	--	--	--	--	--	--	--	--
25...	1400	E25	4.1	940	60	20	20	0	34	30	140	6.1
APR.												
15...	1345	889	--	--	--	--	--	--	--	--	--	--
18...	1415	1480	--	--	--	--	--	--	--	--	--	--
21...	1715	2550	--	--	--	--	--	--	--	--	--	--
25...	1000	4070	6.0	--	--	--	--	--	35	22	72	7.4
30...	1540	4820	--	--	--	--	--	--	--	--	--	--
MAY												
12...	1615	6940	--	--	--	--	--	--	--	--	--	--
27...	1315	536	9.3	--	--	--	--	--	84	57	170	10
JUNE												
25...	1200	321	7.6	2100	1700	140	140	0	93	70	220	9.2
JULY												
28...	1200	43	9.3	--	--	--	--	--	97	86	320	16
AUG.												
25...	1600	394	5.6	--	--	--	--	--	80	82	330	12
SEP.												
25...	1300	16	5.3	410	10	80	70	10	65	53	260	12

E - Estimated.

CANNONBALL RIVER BASIN

06354000 CANNONBALL RIVER AT BREIEN, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	BICARBONATE (HCO ₃) (MG/L)	CARBONATE (CO ₃) (MG/L)	ALKALINITY AS CaCO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLORIDE (CL) (MG/L)	DIS- SOLVED FLUORIDE (F) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)
OCT.											
23...	730	55	690	400	38	1.3	.00	1.0	1.0	.03	1390
NOV.											
25...	560	11	478	1100	23	.5	.11	1.1	1.2	.05	2280
DEC.											
23...	789	--	647	1200	62	.7	.00	.90	.90	.04	--
JAN.											
24...	951	51	866	1100	30	.7	.08	.97	1.1	.07	2610
FEB.											
25...	900	--	738	860	28	.8	.11	1.7	1.8	.04	1940
MAR.											
15...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
25...	241	0	198	310	5.7	.3	.14	.74	.88	.04	685
APR.											
15...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
25...	122	0	100	220	4.1	.2	2.5	4.9	7.4	1.1	460
30...	--	--	--	--	--	--	--	--	--	--	--
MAY											
12...	--	--	--	--	--	--	--	--	--	--	--
27...	311	0	255	530	6.7	.3	.00	1.9	1.9	.14	1080
JUNE											
25...	364	0	299	670	7.6	.3	.03	.95	.98	.10	1320
JULY											
28...	379	0	311	970	12	.4	.00	1.1	1.1	.04	1790
AUG.											
25...	314	22	294	950	12	.4	.01	3.6	3.6	.01	1680
SEP.											
25...	369	7	314	650	12	.4	.00	1.1	1.1	.03	1230

DATE	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)
OCT.											
23...	1.89	1.88	220	0	80	12	2130	9.0	7.0	20	9.0
NOV.											
25...	3.10	86.2	540	61	66	9.4	3070	8.5	.0	10	12.9
DEC.											
23...	3.32	63.6	620	0	67	10	3290	8.3	.0	6	11.0
JAN.											
24...	3.55	17.6	710	0	65	10	3800	8.0	.0	7	10.2
FEB.											
25...	2.64	4.92	540	0	66	9.2	3400	7.7	.0	4	7.4
MAR.											
15...	--	--	--	--	--	--	3100	--	.0	--	--
19...	--	--	--	--	--	--	1020	--	.5	--	--
25...	.93	46.2	210	11	59	4.2	1000	8.6	.0	20	10.2
APR.											
15...	--	--	--	--	--	--	315	--	.0	--	--
18...	--	--	--	--	--	--	300	--	1.0	--	--
21...	--	--	--	--	--	--	520	--	3.5	--	--
25...	.63	5060	180	78	46	2.3	740	7.5	4.0	550	9.6
30...	--	--	--	--	--	--	875	--	6.0	--	--
MAY											
12...	--	--	--	--	--	--	1000	--	12.0	--	--
27...	1.47	1560	440	190	45	3.5	481	8.3	16.0	60	8.4
JUNE											
25...	1.80	1140	520	220	47	4.2	1850	8.5	25.0	65	9.0
JULY											
28...	2.43	212	600	290	53	5.7	2300	8.2	25.5	15	7.0
AUG.											
25...	2.28	1790	540	240	57	6.2	2200	8.4	18.0	1400	7.5
SEP.											
25...	1.67	53.1	380	66	59	5.8	1680	8.4	13.0	10	9.6

06354000 CANNONBALL RIVER AT BREIEN, N. DAK.--Continued
 CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	PER- CENT SATUR- ATION	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOC- CI (COL- ONIES PER 100 ML)	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	SUS- PEN- DED ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	SUS- PEN- DED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)
OCT. 23...	78	864	210	10	2	0	2	<10	<10	0	0
NOV. 25...	94	812	89	--	--	--	--	--	--	--	--
DEC. 23...	80	88	82	--	--	--	--	--	--	--	--
JAN. 24...	74	810	57	17	0	0	1	10	9	1	--
FEB. 25...	54	<1	48	--	--	--	--	--	--	--	--
MAR. 15...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
25...	74	<1	112	11	--	--	3	20	20	0	20
APR. 15...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
25...	77	8200	82100	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
MAY 12...	--	--	--	--	--	--	--	--	--	--	--
27...	90	--	--	--	--	--	--	--	--	--	--
JUNE 25...	110	320	380	14	4	2	2	<10	<9	1	0
JULY 28...	89	220	110	--	--	--	--	--	--	--	--
AUG. 25...	84	--	--	--	--	--	--	--	--	--	--
SEP. 25...	96	--	--	11	0	0	0	<10	<10	0	10

DATE	SUS- PEN- DED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	SUS- PEN- DED COBALT (CO) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	SUS- PEN- DED COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	SUS- PEN- DED LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)
OCT. 23...	0	0	<50	<50	0	<10	<5	5	<100	<100	0
JAN. 24...	--	10	50	49	1	20	16	4	100	96	4
MAR. 15...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
25...	10	10	<50	<49	1	10	6	4	<100	<99	1
JUNE 25...	0	0	<50	<50	0	10	5	5	<100	<98	2
SEP. 25...	0	10	<50	<49	1	20	17	3	<100	<97	3

DATE	TOTAL MERCURY (HG) (UG/L)	SUS- PEN- DED MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	SUS- PEN- DED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	SUS- PEN- DED ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
OCT. 23...	.0	.0	.0	0	0	0	60	30	30
JAN. 24...	.0	.0	.0	2	2	0	20	0	20
MAR. 25...	.4	.3	.1	0	0	0	30	20	6
JUNE 25...	.1	.0	.1	1	0	1	30	30	0
SEP. 25...	.1	.1	.0	0	0	0	10	0	10

B - Results based on colony count outside the acceptable range.

CANNONBALL RIVER BASIN

06354000 CANNONBALL RIVER AT BREIEN, N. DAK.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT AND BED MATERIAL, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDIMENT CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM
NOV. 25...	1240	30	1.1	--	--	--	--	--	--	87
APR. 15...	1345	1250	3000	56	68	86	89	99	100	--
18...	1415	2060	8230	58	74	89	94	99	100	--
21...	1715	2050	14100	44	62	79	90	99	100	--
JUNE 25...	1200	--	--	--	--	--	--	--	--	--
JULY 28...	1200	1520	180	--	--	--	--	--	--	74
AUG. 25...	1600	--	--	69	92	95	98	100	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM
JUNE 25...	5	11	46	74	88	93	96	98	100

BIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

PHYTOPLANKTON

DATE	TOTAL COUNT CELLS/ML	DOMINANT GENERA	PERCENT COMPOSITION	ALGAL GROUP
741125	19,000	<u>Lyngbya</u>	63	Blue-green
		<u>Ankistrodesmus</u>	33	Green
741223	14,000	<u>Lyngbya</u>	39	Blue-green
		<u>Ankistrodesmus</u>	28	Green
		<u>Chlamydomonas</u>	24	Flagellata
750124	1,200	<u>Chlorella</u>	41	Green
		<u>Ankistrodesmus</u>	20	Green
750225	320	<u>Nitzschia</u>	47	Diatom
		<u>Navicula</u>	24	Diatom
750325	320	<u>Ankistrodesmus</u>	39	Green
		<u>Nitzschia</u>	26	Diatom
750425	17,000	<u>Navicula</u>	29	Diatom
		<u>Nitzschia</u>	17	Diatom
		<u>Scenedesmus</u>	17	Green
750527	14,000	<u>Ankistrodesmus</u>	40	Green
		<u>Cyclotella</u>	26	Diatom
750625	21,000	<u>Oscillatoria</u>	46	Blue-green
750728	260,000	<u>Anacystis</u>	19	Blue-green
		<u>Anabaena</u>	17	Blue-green
		<u>Oscillatoria</u>	50	Blue-green
750925	12,000	<u>Oscillatoria</u>	68	Blue-green

PERIPHYTON

Collected by plastic strips samplers placed in the stream approximately one month prior to collection date.

DATE	DRY WEIGHT G/M ²	ASH WEIGHT G/M ²	CHLOROPHYLL A G/M ²	CHLOROPHYLL B G/M ²
741125	3.1	2.3	--	--
750625	.3	.4	0.0	0.0

CANNONBALL RIVER BASIN

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06354000 CANNONBALL RIVER AT BREIEN, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2550	1880	3500	3270	---	---	---	960	1640	1200	2030	1860
2	2450	1950	3350	3310	---	---	---	885	1700	1690	1410	1850
3	2430	2440	3370	3290	---	2020	---	865	1780	2210	1360	1840
4	2430	2420	3440	3320	3090	---	---	850	1770	1320	1070	1820
5	2300	2370	3400	3300	---	---	---	930	1830	1670	1130	1790
6	2350	2380	3450	3290	---	---	---	1040	1830	2000	1420	1840
7	2120	2330	3350	3290	---	1530	---	1050	1870	2100	1760	1840
8	2120	2320	3510	3350	---	---	---	1100	1830	1160	2000	1860
9	2060	2200	3500	3350	2980	---	---	1330	1740	1440	1970	1840
10	2120	1980	3400	3400	---	---	1160	825	1630	1700	2040	1830
11	2100	1820	3350	---	---	---	830	1040	1600	1680	2080	1860
12	2110	2210	3270	3350	---	3280	681	1020	1600	1740	2070	1860
13	2080	2570	3140	3550	---	---	383	842	1740	1860	2070	1880
14	2080	2480	3200	3350	3500	---	327	750	1810	1850	2160	1900
15	2060	2950	3110	3520	---	---	343	735	1720	1960	2110	1920
16	2050	3330	2980	3610	---	---	322	912	1640	---	2200	1820
17	2070	3720	3080	3800	---	1170	308	950	1730	2040	2250	1840
18	2040	3680	3100	3770	---	---	358	1020	1850	2050	2260	1860
19	2100	3560	3200	3710	---	---	322	1040	1740	2120	2240	1820
20	2100	3220	3290	3600	3010	---	408	1080	1490	2130	2240	1800
21	2150	3380	3150	3650	---	---	690	1170	1290	2160	2210	1790
22	2170	3220	3200	3600	---	877	750	1220	1430	2120	2240	1790
23	2100	3150	3220	3760	---	---	680	1260	1400	2130	538	1750
24	2060	3100	3230	3800	---	---	720	1220	1650	2220	1340	1770
25	2090	3110	3250	3700	2680	975	730	1180	1670	2140	1580	1720
26	2100	3200	2890	3640	---	---	790	1340	1830	2230	1230	1770
27	2070	3110	3240	3330	---	---	903	1500	1850	2300	1380	1760
28	2040	3290	3230	3400	---	---	830	1480	2030	2340	1950	1740
29	2020	3420	3190	3320	---	---	487	1460	2020	2370	2000	1740
30	1980	3340	3280	3350	---	---	715	1580	2000	2410	1970	1750
31	1850	---	3200	3320	---	---	---	1620	---	2390	1870	---
MONTH	2140	2800	3260	3480	---	---	---	1090	1720	1960	1810	1810

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	7.0	---	0.0	---	---	---	6.0	15.0	22.0	21.0	19.0
2	3.0	3.5	0.0	0.0	---	0.0	---	5.0	16.0	25.0	19.0	17.0
3	4.5	3.0	0.0	0.0	---	---	---	6.5	16.5	24.0	20.0	15.0
4	8.0	3.0	0.0	0.0	---	---	---	8.5	17.0	26.0	19.0	15.5
5	7.0	3.5	0.0	---	---	---	---	10.0	16.0	27.0	18.0	13.0
6	5.0	3.0	---	0.0	---	---	---	11.0	16.0	26.0	19.0	15.0
7	2.0	2.0	0.0	0.0	---	0.0	---	11.5	16.0	24.0	21.0	15.0
8	8.5	1.5	0.0	0.0	---	---	---	10.0	18.0	23.0	20.0	13.0
9	7.0	2.0	0.0	0.0	---	---	0.0	10.0	14.0	22.0	20.0	13.5
10	8.0	2.5	0.0	0.0	---	---	0.0	11.0	13.0	21.0	18.0	15.5
11	10.5	2.5	---	---	---	---	0.0	13.0	14.0	20.0	19.0	13.0
12	5.0	1.0	0.0	0.0	---	0.0	0.0	12.0	16.0	18.5	21.0	9.0
13	6.5	0.0	0.0	0.0	---	---	0.0	12.0	19.0	21.0	17.0	9.5
14	5.0	0.0	0.0	0.0	---	---	0.0	12.5	17.5	21.5	20.0	11.0
15	2.5	0.0	0.0	0.0	---	---	0.0	12.0	16.0	23.5	17.5	14.0
16	5.0	0.5	---	0.0	---	---	0.0	15.0	16.5	26.0	18.0	15.0
17	8.0	1.0	0.0	0.0	---	0.0	0.0	16.5	17.5	27.0	17.5	17.0
18	8.5	1.0	0.0	0.0	---	---	0.0	16.0	19.0	25.0	16.5	13.0
19	5.0	0.5	0.0	0.0	---	---	0.0	15.5	17.5	21.0	16.5	9.0
20	6.5	0.5	0.0	0.0	---	---	0.0	14.0	20.0	20.0	18.0	7.0
21	7.0	2.0	---	0.0	---	---	0.0	12.5	21.0	21.5	20.0	6.0
22	7.5	0.0	0.0	0.0	---	0.0	0.0	11.5	21.0	22.0	18.0	9.0
23	7.0	0.0	0.0	0.0	---	---	4.5	12.0	20.0	21.0	12.0	10.0
24	5.0	0.0	0.0	0.0	---	---	4.0	12.0	23.0	19.0	18.5	9.5
25	2.0	0.0	0.0	---	0.0	---	4.0	13.5	24.0	20.0	15.0	9.0
26	2.0	0.5	---	0.0	---	---	7.0	11.5	22.5	22.5	15.0	10.0
27	4.0	0.5	0.0	0.0	---	---	9.0	16.0	20.0	22.0	16.5	11.0
28	2.0	0.0	0.0	0.0	---	---	9.0	13.5	21.0	23.0	19.0	12.0
29	6.5	0.0	0.0	0.0	---	---	7.0	14.5	22.0	23.0	21.5	9.0
30	10.0	0.0	0.0	---	---	---	5.0	13.0	22.5	23.0	18.0	9.0
31	10.0	---	---	0.0	---	---	---	14.5	---	23.5	20.5	---
MONTH	6.0	1.5	---	0.0	---	---	---	12.0	18.5	22.5	18.5	12.0

CANNONBALL RIVER BASIN

06354000 CANNONBALL RIVER AT BREIEN, N. DAK.--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.02	62	0	1.1	43	.13	10	110	3.0
2	.03	61	.01	7.3	81	3.0	9.9	110	2.9
3	.06	62	.01	3.7	85	.85	9.5	110	2.8
4	.07	62	.01	3.2	70	.60	9.9	120	3.2
5	.09	61	.01	2.8	62	.47	9.9	120	3.2
6	.15	73	.03	2.7	57	.42	9.9	130	3.5
7	.19	82	.04	5.5	74	1.6	9.5	120	3.1
8	.24	90	.06	17	113	5.2	7.6	110	2.3
9	.33	120	.11	15	100	4.1	7.6	100	2.1
10	.36	140	.14	15	92	3.7	7.6	100	2.1
11	.36	136	.13	17	88	2.9	7.9	100	2.1
12	.44	144	.17	11	85	2.5	8.3	130	2.9
13	.44	140	.17	9.5	80	2.1	8.7	150	3.5
14	.48	128	.17	8.3	80	1.8	9.1	150	3.7
15	.48	120	.16	9.5	80	2.1	9.1	150	3.7
16	.48	115	.15	11	85	2.5	9.1	150	3.7
17	.48	112	.15	17	85	2.8	9.1	150	3.7
18	.48	107	.14	11	85	2.5	9.1	150	3.7
19	.48	100	.13	15	90	3.6	9.1	150	3.7
20	.52	95	.13	11	90	2.7	9.1	150	3.7
21	.52	90	.13	17	90	2.9	9.1	150	3.7
22	.48	87	.11	14	90	3.4	9.1	150	3.7
23	.48	96	.12	15	90	3.6	9.5	160	4.1
24	.48	82	.11	12	90	2.9	9.5	160	4.1
25	.48	64	.08	12	90	2.9	9.0	150	3.6
26	.52	50	.07	14	100	3.8	8.5	140	3.2
27	.52	42	.06	9.5	100	2.6	8.5	140	3.2
28	.52	35	.05	12	120	3.9	8.0	140	3.0
29	.52	28	.04	11	110	3.3	8.0	130	2.8
30	.56	22	.03	11	110	3.3	7.5	130	2.6
31	1.4	61	.32	---	---	---	7.0	130	2.5
MONTH	12.66	---	---	306.1	---	---	273.7	---	---

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	7.0	120	2.3	1.8	50	.24	2.0	100	.54
2	6.5	120	2.1	1.8	50	.24	2.0	110	.59
3	6.5	120	2.1	1.8	52	.25	3.0	110	.89
4	6.0	120	1.9	1.8	52	.25	4.0	110	1.2
5	6.0	120	1.9	1.6	52	.22	5.0	110	1.5
6	5.5	120	1.8	1.6	50	.22	6.0	110	1.8
7	5.0	120	1.6	1.6	50	.22	7.0	110	2.1
8	4.5	120	1.5	1.4	50	.19	6.0	110	1.8
9	4.5	120	1.5	1.4	48	.18	6.0	110	1.8
10	4.5	120	1.5	1.4	48	.18	6.0	110	1.8
11	4.0	120	1.3	1.4	48	.18	7.0	110	2.1
12	3.0	120	.97	1.2	48	.16	8.0	110	2.4
13	3.0	120	.97	1.2	46	.15	9.0	110	2.7
14	3.0	120	.97	1.2	46	.15	10	120	3.2
15	3.0	120	.97	1.2	46	.15	20	150	8.1
16	2.5	130	.88	1.0	46	.12	100	200	54
17	2.5	130	.88	1.0	44	.12	100	250	67
18	2.5	140	.95	1.0	44	.12	150	300	121
19	2.5	140	.95	1.0	44	.12	280	350	265
20	2.5	150	1.0	1.0	44	.12	200	400	216
21	2.5	110	.74	1.0	42	.11	130	450	158
22	2.5	100	.68	1.0	42	.11	80	400	86
23	2.5	90	.61	1.0	40	.11	50	250	34
24	2.5	90	.61	1.0	40	.11	30	100	8.1
25	2.5	90	.61	1.0	40	.11	25	40	2.7
26	2.5	80	.54	1.0	40	.11	25	30	2.0
27	2.0	70	.38	1.2	50	.16	20	30	1.6
28	2.0	70	.38	1.6	70	.30	20	30	1.6
29	2.0	60	.32	---	---	---	15	30	1.2
30	2.0	60	.32	---	---	---	15	25	1.0
31	2.0	50	.27	---	---	---	15	25	1.0
MONTH	109.5	---	---	36.2	---	---	1356.0	---	---

CANNONBALL RIVER BASIN

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06354000 CANNONBALL RIVER AT BREIEN, N. DAK.--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	12	25	.81	6060	3700	60500	407	94	103
2	12	25	.81	5910	3220	51400	383	70	72
3	10	25	.68	4320	2620	30600	358	55	53
4	10	20	.54	2770	2050	15300	329	55	49
5	10	20	.54	1780	1470	7060	305	54	44
6	15	30	1.2	1280	1060	3660	284	52	40
7	20	40	2.2	1050	990	2810	280	49	37
8	30	60	4.9	1390	1810	7730	270	85	62
9	50	100	13	1530	2020	8340	323	355	310
10	100	150	40	2480	3200	23100	379	665	680
11	200	300	162	5960	4730	76000	302	455	371
12	500	400	540	7520	2670	54200	284	268	206
13	700	600	1130	8080	2670	58200	284	145	111
14	800	900	1940	6460	2300	40100	319	300	258
15	900	1200	2920	4340	1970	23100	431	765	890
16	1100	1300	3860	2570	1550	10800	379	430	440
17	1300	1410	4950	1610	1180	5130	344	248	230
18	1520	2500	10300	1160	865	2710	326	140	123
19	1570	2140	9070	1060	994	2840	382	807	1030
20	2020	2360	12900	825	700	1560	580	2340	3660
21	2620	2190	15500	700	478	903	415	500	560
22	3180	3020	25900	630	350	595	451	1280	1560
23	4150	3770	42200	644	718	1250	423	1050	1200
24	4550	4350	53400	705	1120	2130	361	280	273
25	4050	2560	28000	608	828	1360	326	160	141
26	3180	1980	17000	567	322	493	302	150	122
27	2390	1700	11000	535	283	409	261	150	106
28	4720	3540	53100	504	214	291	234	148	94
29	6210	3540	60700	479	166	215	228	148	91
30	4520	2580	31500	455	129	158	484	2090	824000
31	---	---	---	399	106	114	---	---	---
MONTH	50449	---	---	74381	---	---	10434	---	---

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	347	1750	1640	196	5190	4630	85	123	28
2	488	1300	1710	134	5260	2260	70	114	22
3	513	1030	1430	58	850	133	57	98	15
4	336	350	318	44	142	17	50	77	10
5	252	230	156	39	82	8.6	44	54	6.4
6	228	230	142	32	62	5.4	37	42	4.2
7	532	2620	4620	29	62	4.9	34	41	3.8
8	447	3050	3680	28	63	4.8	28	40	3.0
9	399	560	603	24	64	4.1	24	40	2.6
10	305	340	280	22	65	3.9	21	40	2.3
11	234	250	158	19	67	3.4	18	37	1.8
12	189	164	84	18	68	3.3	17	30	1.4
13	165	106	47	16	70	3.0	17	24	1.1
14	145	88	34	15	71	2.9	15	22	.89
15	126	88	30	15	72	2.9	15	25	1.0
16	111	88	26	15	73	3.0	14	30	1.1
17	101	88	24	15	75	3.0	14	34	1.3
18	94	88	22	15	76	3.1	13	37	1.3
19	87	87	20	18	83	4.0	12	40	1.3
20	78	87	18	33	103	9.2	13	43	1.5
21	70	87	16	28	80	6.0	14	46	1.7
22	68	92	17	24	58	3.8	14	49	1.9
23	64	83	14	194	1170	753	14	49	1.9
24	60	75	12	87	320	75	14	45	1.7
25	55	72	11	314	927	1150	14	33	1.2
26	51	70	9.6	439	960	1140	12	25	.81
27	47	70	8.9	326	830	731	12	25	.81
28	44	70	8.3	255	480	330	13	25	.88
29	39	70	7.4	186	270	136	14	25	.95
30	34	70	6.4	140	133	50	14	25	.95
31	41	186	37	109	125	37	---	---	---
MONTH	5750	---	---	2887	---	---	733	---	---

YEAR 146728.2

1744216

GRAND RIVER BASIN

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, N. DAK.

LOCATION.--Lat 46°06'40", long 103°02'20", in SE¼NE¼ sec.3, T.130 N., R.99 W., Bowman County, at Chicago, Milwaukee, St. Paul, Pacific, R. R. bridge, 1.8 mi (2.9 km) east of Gascoyne.

DRAINAGE AREA.--15.7 mi² (40.1 km²), approximately.

PERIOD OF RECORD.--Chemical analyses: November 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	TOTAL ALUM- INUM (AL) (UG/L)	SUS- PENDE- D ALUM- INUM (AL) (UG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	SUS- PENDE- D MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)
OCT.												
03...	1655	.06	3.1	1100	1100	10	1300	230	290	50	240	170
NOV.												
06...	1035	.07	7.4	--	--	--	--	--	--	--	--	160
DEC.												
04...	1230	.11	17	--	--	--	--	--	--	--	--	250
APR.												
14...	1710	21	4.3	1500	1500	50	2000	90	210	50	160	53
MAY												
08...	1030	3.8	9.8	--	--	--	--	--	--	--	--	120
JUNE												
03...	1520	1.5	.5	60	40	20	900	110	170	40	130	170
JULY												
08...	1525	.60	4.1	--	--	--	--	--	--	--	--	160
AUG.												
05...	1435	.36	8.4	--	--	--	--	--	--	--	--	110
SEP.												
03...	1030	36	7.8	1600	1600	40	1200	40	140	40	100	150
30...	1135	.64	7.3	--	--	--	--	--	--	--	--	130

DATE	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	BROMIDE (BR) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)
OCT.												
03...	210	1600	19	0	759	3800	20	1.3	--	.00	--	--
NOV.												
06...	140	1100	6.9	--	648	2500	20	1.0	--	.01	--	--
DEC.												
04...	220	1600	20	--	1210	3800	24	1.3	--	.06	--	--
APR.												
14...	65	310	6.3	0	167	870	4.2	.2	.1	.47	.15	1.0
MAY												
08...	130	490	12	0	239	1600	7.3	.4	.1	.39	.10	1.6
JUNE												
03...	250	910	.5	12	382	3000	7.5	.8	.1	.05	.02	3.3
JULY												
08...	130	670	11	0	505	1800	9.3	.9	.1	.01	.02	1.1
AUG.												
05...	87	730	12	0	531	1600	10	1.0	.1	.88	.59	1.9
SEP.												
03...	110	790	12	0	478	2000	11	.9	.1	.42	.03	1.8
30...	100	810	11	22	577	1900	11	1.0	.1	.12	.12	4.3

DATE	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	TOTAL FILT- RABLE RESIDUE (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	TOTAL FILT- RABLE RESIDUE (MG/L)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM
OCT.												
03...	2.7	2.7	.16	--	6630	7100	9.02	1.07	60	1300	530	73
NOV.												
06...	1.2	1.2	.05	--	4730	--	6.43	.89	--	980	330	71
DEC.												
04...	1.5	1.6	.05	--	7000	--	9.52	2.08	--	1500	320	69
APR.												
14...	1.2	1.7	.12	.06	1530	--	2.08	86.8	--	400	240	62
MAY												
08...	1.7	2.1	.10	.02	2720	--	3.70	27.9	--	840	600	56
JUNE												
03...	3.3	3.4	.04	.01	4950	--	6.73	20.0	--	1500	1100	58
JULY												
08...	1.1	1.1	.03	.00	3310	--	4.50	5.36	--	930	430	61
AUG.												
05...	2.5	3.4	.15	.00	2980	--	4.05	2.90	--	630	100	71
SEP.												
03...	1.8	2.2	.12	.01	3440	--	4.68	334	--	830	350	67
30...	4.4	4.5	.13	.01	3420	3300	4.65	5.91	260	740	160	70

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, N. DAK.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TOTAL LITHIUM (LI) (UG/L)	SUS- PENDED LITHIUM (LI) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	TOTAL MERCURY (HG) (UG/L)	SUS- PENDED MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL MOLYB- DENUM (MO) (UG/L)	SUS- PENDED MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	TOTAL NICKEL (NI) (UG/L)
OCT.										
03...	170	0	170	.2	.2	.0	9	1	8	50
NOV.										
06...	--	--	--	--	--	--	--	--	--	--
DEC.										
04...	--	--	--	--	--	--	--	--	--	--
APR.										
14...	30	0	30	.1	.0	.1	2	0	2	<50
MAY										
08...	--	--	--	--	--	--	--	--	--	--
JUNE										
03...	70	0	70	.0	.0	.0	6	0	6	50
JULY										
08...	--	--	--	--	--	--	--	--	--	--
AUG.										
05...	--	--	--	--	--	--	--	--	--	--
SEP.										
03...	70	0	70	1.2	.0	1.2	3	0	5	<50
30...	--	--	--	--	--	--	--	--	--	--

DATE	SUS- PENDED NICKEL (NI) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	SUS- PENDED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL STRON- TIUM (SR) (UG/L)	SUS- PENDED STRON- TIUM (SR) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	TOTAL ZINC (ZN) (UG/L)
OCT.										
03...	36	14	0	0	0	--	--	--	2.4	40
NOV.										
06...	--	--	--	--	--	--	--	--	--	--
DEC.										
04...	--	--	--	--	--	--	--	--	--	--
APR.										
14...	<46	4	1	1	0	--	--	--	.3	--
MAY										
08...	--	--	--	--	--	--	--	--	--	--
JUNE										
03...	45	5	1	0	1	3600	200	3400	.0	--
JULY										
08...	--	--	--	--	--	--	--	--	--	--
AUG.										
05...	--	--	--	--	--	--	--	--	--	--
SEP.										
03...	<46	4	1	0	1	4200	0	4600	2.0	--
30...	--	--	--	--	--	--	--	--	--	--

DATE	SUS- PENDED ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	DIS- SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS- PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS- SOLVED GROSS BETA AS CS-137 (PC/L)	SUS- PENDED GROSS BETA AS CS-137 (PC/L)	DIS- SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS- PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS- SOLVED RA-226 (RADON METHOD) (PC/L)	DIS- SOLVED NATURAL URANIUM (U) (UG/L)
OCT.										
03...	30	10	<100	3.0	32	6.0	28	5.0	.19	15
NOV.										
06...	--	--	--	--	--	--	--	--	--	--
DEC.										
04...	--	--	--	--	--	--	--	--	--	--
APR.										
14...	--	30	--	--	--	--	--	--	--	--
MAY										
08...	--	--	--	--	--	--	--	--	--	--
JUNE										
03...	--	--	--	--	--	--	--	--	--	--
JULY										
08...	--	--	--	--	--	--	--	--	--	--
AUG.										
05...	--	--	--	--	--	--	--	--	--	--
SEP.										
03...	--	30	--	--	--	--	--	--	--	--
30...	--	--	<28	11	82	<13	68	<12	.30	--

GRAND RIVER BASIN

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06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, N. DAK.--Continued

SUSPENDED SEDIMENT DISCHARGE MEASUREMENTS AND PARTICLE-SIZE DISTRIBUTION OF BED MATERIAL
WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)	BED MAT. FALL DIAM. % FINER THAN .004 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM
DEC. 04...	1230	57	.02	--	--	--	--
APR. 14...	1710	63	3.6	--	--	--	--
MAY 08...	1030	83	.85	--	--	--	--
JUNE 03...	1520	72	.29	14	40	49	61
JULY 08...	1525	20	.03	--	--	--	--
AUG. 05...	1435	152	.15	--	--	--	--
SEP. 03...	1030	397	39	5	14	16	22
30...	1135	1200	2.1	--	--	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM
DEC. 04...	--	--	--	--	--	--
APR. 14...	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--
JUNE 03...	92	97	98	99	99	100
JULY 08...	--	--	--	--	--	--
AUG. 05...	--	--	--	--	--	--
SEP. 03...	35	42	52	66	81	100
30...	--	--	--	--	--	--

JAMES RIVER BASIN

06470500 JAMES RIVER AT LA MOURE, N. DAK.

LOCATION.--Lat 46°21'20", long 98°18'15", at NE&NE¼ of sec.11, T.133 N., R.61 W., LaMoure County, at gaging station on left bank 80 ft (24 km) downstream from bridge on State Highway 13, 0.5 mi (0.8 km) west of LaMoure, and 12 mi (19 km) upstream from Cottonwood Creek.

DRAINAGE AREA.--4,390 mi² (11,370 km²), approximately, of which about 2,600 mi² (6,730 km²) is probably noncontributing.

PERIOD OF RECORD.--Chemical analyses: September 1957 to current year (partial-record station).

Water temperatures: June 1953 to current year.

EXTREMES.--Current year:

Water temperatures: Maximum, 28.0°C July 28-31 and Aug. 1; minimum, freezing point on many days during winter months.

Period of record:

Water temperatures: Maximum, 33.0°C July 12, 13, 1957; minimum, freezing point on many days during winter months.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SiO ₂) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO ₃) (MG/L)
NOV. 21...	1030	14	8.3	10	100	69	31	79	10	366
APR. 22...	1330	2900	7.9	170	210	19	7.4	8.4	6.8	75

DATE	CARBONATE (CO ₃) (MG/L)	ALKALINITY AS CaCO ₃ (MG/L)	DIS-SOLVED SULFATE (SO ₄) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)
NOV. 21...	--	300	130	29	.2	.02	.09	540	.73	20.4
APR. 22...	0	62	31	4.0	.1	2.3	.16	141	.19	1100

DATE	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	DIS-SOLVED BORON (B) (UG/L)
NOV. 21...	300	0	35	2.0	800	8.7	4.5	10	150
APR. 22...	78	16	17	.4	160	7.7	3.0	80	50

JAMES RIVER BASIN

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06470500 JAMES RIVER AT LA MOURE, N. DAK.--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	9.0	10.5	8.0	3.5	3.0	1.0	0.5	0.0	0.0	0.0	0.0
2	9.5	8.5	8.0	7.0	4.0	3.5	0.5	0.5	0.0	0.0	0.0	0.0
3	10.0	9.0	7.0	6.0	4.0	4.0	0.5	0.5	0.0	0.0	0.0	0.0
4	10.0	10.0	6.0	5.5	4.0	4.0	0.5	0.5	0.0	0.0	0.0	0.0
5	10.0	9.0	5.5	5.5	3.5	3.5	0.5	0.5	0.0	0.0	0.0	0.0
6	9.0	8.5	5.5	4.5	3.5	3.5	0.5	0.5	0.0	0.0	0.0	0.0
7	8.5	7.5	4.5	4.5	3.5	3.5	0.5	0.5	0.0	0.0	0.0	0.0
8	10.5	8.5	5.5	4.5	3.5	3.5	0.5	0.0	0.0	0.0	0.0	0.0
9	11.0	10.0	6.0	5.5	3.5	3.5	0.5	0.0	0.0	0.0	0.0	0.0
10	12.5	11.0	5.5	5.5	4.0	3.5	1.0	0.5	0.0	0.0	0.0	0.0
11	12.5	12.5	5.5	4.0	4.0	4.0	1.0	1.0	0.0	0.0	0.0	0.0
12	12.5	10.5	4.0	3.5	4.0	4.0	1.0	1.0	0.0	0.0	0.0	0.0
13	10.5	10.0	3.5	2.0	4.0	4.0	1.0	0.5	0.0	0.0	0.0	0.0
14	10.0	9.5	2.0	2.0	4.0	4.0	0.5	0.5	0.0	0.0	0.0	0.0
15	9.5	8.5	2.0	2.0	3.5	3.5	0.5	0.5	0.0	0.0	0.0	0.0
16	9.5	8.0	3.0	2.0	3.5	2.5	0.5	0.5	0.0	0.0	0.0	0.0
17	10.0	9.5	3.5	3.0	2.5	2.5	0.5	0.5	0.0	0.0	0.0	0.0
18	11.5	10.0	4.0	3.5	2.5	2.5	0.5	0.5	0.0	0.0	0.0	0.0
19	11.5	10.5	4.0	4.0	2.5	2.5	0.5	0.5	0.0	0.0	0.0	0.0
20	11.0	10.0	4.5	4.0	2.5	2.5	0.5	0.0	0.0	0.0	0.0	0.0
21	10.0	9.0	4.5	4.5	2.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
22	10.0	9.5	5.0	4.5	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
23	10.0	9.0	5.0	4.5	2.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
24	9.5	9.0	4.5	4.5	2.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
25	10.0	9.0	4.5	4.0	2.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
26	9.5	8.5	4.0	3.5	2.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
27	10.0	9.0	3.5	2.5	2.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
28	10.5	10.0	3.0	3.0	2.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
29	10.5	10.5	3.0	3.0	2.0	2.0	0.0	0.0	---	---	0.0	0.0
30	10.5	10.5	3.0	3.0	2.0	1.0	0.0	0.0	---	---	0.0	0.0
31	10.5	10.5	---	---	1.0	1.0	0.0	0.0	---	---	0.0	0.0
MONTH	12.5	7.5	10.5	2.0	4.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0

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

JAMES RIVER BASIN

06470833 PILOT DRAIN AT OAKES, N. DAK.

LOCATION.--Lat 46°07'30", long 98°05'49", in SW4SE4 sec.29, T.131 N., R.59 W., Dickey County, on left bank 1 mi (1.6 km) south and 0.4 mi (0.6 km) west of Oakes.

DRAINAGE AREA.--5.1 mi² (13.2 km²).

PERIOD OF RECORD.--Chemical analyses: October 1971 to current year.

Specific conductance: October 1971 to current year.

Water temperatures: October 1971 to current year.

EXTREMES.--Current year:

Specific conductance: Maximum daily, 780 micromhos Oct. 2; minimum daily, 392 micromhos June 19.

Water temperatures: Maximum daily, 22.5°C June 25; minimum daily, 0.5°C Mar. 25 and 26.

Period of record:

Dissolved solids (1971-73): Maximum, 498 mg/l Nov. 1-30, 1972; minimum, 380 mg/l Jan. 1-31, 1972.

Hardness (1971-73): Maximum, 380 mg/l Oct. 1-26, 1972; minimum, 300 mg/l Mar. 1-31, 1972 and July 1-31, 1973.

Specific conductance: Maximum daily, 830 micromhos Apr. 5, 10, and 12, 1973; minimum daily, 320 micromhos Mar. 16, 1972.

Water temperatures: Maximum daily, 26.5°C Aug. 18, 1972; minimum, freezing point on many days during winter period.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)
OCT. 30...	1030	.48	27	--	--	--	91	32	18	5.8	353	--
NOV. 21...	1230	.06	27	--	--	--	99	32	19	5.4	363	--
JAN. 09...	0845	.02	30	--	--	--	84	27	15	4.5	329	0
30...	1345	.02	31	--	--	--	80	27	18	6.6	329	--
MAR. 04...	1545	.01	25	--	--	--	80	30	16	4.6	328	0
APR. 20...	1200	.04	25	--	--	--	81	27	15	4.3	322	--
MAY 29...	0730	1.7	22	20	50	190	91	35	19	6.1	352	0
JULY 01...	1030	6.7	28	--	--	--	86	38	19	6.6	336	0
AUG. 05...	1100	2.5	26	--	--	--	87	32	19	6.0	351	0
SEP. 03...	0815	2.9	26	--	--	--	93	35	19	6.5	355	0

DATE	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOL- VEN- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM
OCT. 30...	290	97	15	.2	.61	.00	460	.63	.60	360	69	10
NOV. 21...	298	88	13	.2	.77	.05	472	.64	.08	380	81	10
JAN. 09...	270	57	12	.2	3.4	.01	410	.56	.02	320	51	9
30...	270	56	12	.2	3.7	.02	403	.55	.02	310	41	11
MAR. 04...	269	48	11	.2	3.6	.02	407	.55	.01	320	54	10
APR. 20...	264	59	11	.2	3.4	.00	398	.54	.04	310	49	9
MAY 29...	289	94	15	.3	.13	.02	460	.63	2.11	370	83	10
JULY 01...	276	100	13	.2	1.5	.02	482	.66	8.72	370	96	10
AUG. 05...	288	88	12	.3	.68	.00	449	.61	3.09	350	61	10
SEP. 03...	291	96	11	.2	.92	.01	471	.64	3.75	380	85	10

JAMES RIVER BASIN

06470833 PILOT DRAIN AT OAKES, N. DAK.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	750	700	690	---	641	---	---	547	---	725	685	---
2	780	700	670	639	639	---	---	590	612	740	---	645
3	755	700	661	630	637	648	---	---	652	611	---	555
4	730	700	668	630	605	592	---	---	632	---	705	646
5	730	717	668	640	647	602	---	685	681	---	695	619
6	730	732	660	639	649	620	---	688	690	---	700	---
7	723	730	660	645	643	635	559	685	690	655	700	---
8	735	715	660	639	640	---	567	702	690	551	688	718
9	730	720	664	638	650	---	597	709	690	620	---	725
10	710	720	630	642	649	631	597	---	618	655	---	690
11	735	720	657	650	605	613	580	---	663	532	695	724
12	740	720	657	650	630	614	---	708	650	---	744	702
13	740	720	657	667	621	628	---	711	698	---	705	---
14	740	739	660	665	630	622	575	708	695	702	710	---
15	748	762	660	664	630	---	600	702	692	670	718	725
16	738	750	660	667	630	---	597	720	688	652	---	662
17	738	740	660	670	620	588	560	---	712	663	---	717
18	735	736	652	690	621	589	590	---	695	650	737	716
19	740	700	665	700	630	602	---	700	392	670	730	773
20	740	710	660	721	634	587	---	703	638	690	403	---
21	735	740	660	709	630	500	550	708	660	707	725	---
22	735	725	660	710	630	---	537	710	695	681	719	722
23	730	730	661	700	640	---	530	642	734	623	---	730
24	738	740	660	690	639	---	550	---	775	638	---	730
25	738	752	650	680	630	629	575	---	732	675	722	725
26	740	738	665	670	627	598	---	---	724	700	722	723
27	740	744	665	660	639	---	---	741	725	725	721	---
28	740	725	665	660	637	---	571	743	720	752	710	---
29	740	725	665	647	---	---	577	737	718	740	717	702
30	740	710	665	645	---	---	550	741	717	698	---	700
31	730	---	661	643	---	---	---	---	---	700	---	---
MONTH	738	725	661	663	633	---	---	---	679	670	---	---

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	8.0	4.0	---	3.0	---	---	5.0	---	17.0	16.0	---
2	3.0	6.0	4.0	4.0	3.0	---	---	2.0	14.0	18.0	---	12.0
3	6.0	4.0	4.0	4.0	3.5	4.0	---	---	14.0	17.0	---	11.0
4	8.5	2.0	4.0	4.0	3.5	4.0	---	---	13.5	---	15.0	11.0
5	7.0	2.5	4.0	4.0	4.0	4.0	---	12.0	14.5	---	14.5	10.0
6	5.0	1.5	4.0	3.5	4.0	3.5	---	9.0	14.0	---	14.5	---
7	4.0	2.0	4.0	3.5	4.0	4.0	3.5	8.0	13.0	18.0	15.0	---
8	7.0	3.0	3.0	3.5	4.0	---	3.0	7.0	12.0	19.0	16.5	9.5
9	7.5	3.0	3.0	3.5	4.0	---	3.0	10.0	11.0	18.0	---	11.0
10	9.5	2.0	4.0	3.0	4.0	4.0	3.0	---	11.5	15.0	---	14.0
11	10.0	2.0	4.0	5.0	4.0	4.0	3.0	---	14.5	13.0	15.0	11.0
12	8.0	2.0	4.0	6.0	3.5	4.0	---	10.0	14.5	13.5	16.0	10.0
13	7.0	1.5	4.0	7.0	3.5	3.5	---	10.0	17.5	14.0	14.0	---
14	6.0	1.5	4.0	7.5	3.5	3.5	4.0	10.5	17.0	14.5	14.0	---
15	4.5	2.0	3.0	7.5	4.0	---	5.0	10.5	16.0	14.5	13.5	11.0
16	4.5	2.0	3.0	7.5	4.0	---	5.0	15.0	15.0	15.5	---	12.0
17	7.0	2.0	4.0	7.5	4.0	5.5	5.0	---	17.0	16.0	---	12.5
18	9.0	1.5	3.5	7.0	4.5	5.0	5.5	---	16.0	15.5	12.0	11.5
19	8.0	1.5	3.5	7.0	3.0	7.0	---	17.0	16.0	15.5	12.5	9.0
20	7.0	1.0	3.5	7.5	3.0	6.0	---	14.0	17.0	15.0	15.0	---
21	6.5	2.0	3.0	7.0	3.0	6.0	7.0	14.0	17.0	15.0	14.0	---
22	7.0	1.5	3.0	6.0	3.0	---	6.0	13.0	17.0	15.0	12.0	10.5
23	6.0	2.0	3.0	6.0	3.0	---	7.0	12.0	17.0	14.5	---	11.0
24	7.0	2.0	3.5	5.0	3.0	---	5.0	---	21.5	14.0	---	9.5
25	4.5	2.0	4.0	4.0	3.0	0.5	6.5	---	22.5	14.0	12.0	9.0
26	5.0	3.0	4.0	3.0	3.0	0.5	---	---	18.5	14.5	11.0	9.0
27	6.0	2.0	4.0	3.0	3.5	---	---	12.0	15.0	15.0	12.0	---
28	8.0	3.0	4.0	2.5	4.0	---	6.5	12.0	15.0	15.5	13.5	---
29	9.5	3.5	4.0	2.5	---	---	6.0	14.0	15.0	16.5	15.0	10.0
30	10.0	4.0	4.0	2.5	---	---	7.0	15.0	15.0	17.0	---	9.0
31	10.0	---	4.0	2.5	---	---	---	---	---	17.0	---	---
MONTH	7.0	2.5	3.5	5.0	3.5	---	---	---	15.5	15.5	---	---

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 45°56'10", long 98°10'26", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.34, T.129 N., R. 60 W., Dickey County, at bridge on North Dakota-South Dakota State line road 6.5 mi (9.8 km) south and 1 mi (1.6 km) west from Ludden, N. Dak.

PERIOD OF RECORD.--Chemical analyses: October 1974 to current year.

Specific conductance: October 1974 to current year.

Water temperatures: October 1974 to current year.

EXTREMES.--Current year:

Specific conductance: Maximum daily, 2,500 micromhos, Mar. 16; minimum daily, 242 micromhos, Apr. 25.

Water temperatures: Maximum daily, 27.0°C, July 3-7; minimum daily, freezing point on several days during winter period.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	DIS-SOLVED SILICA (SI02) (MG/L)	DIS-SOLVED ALUMINUM (AL) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HC03) (MG/L)	CARBONATE (C03) (MG/L)	ALKALINITY AS CAC03 (MG/L)
OCT. 30...	1300	17	--	--	--	59	33	79	11	355	0	291
NOV. 21...	1400	17	--	--	--	62	35	80	13	376	--	308
JAN. 09...	1130	18	--	--	--	77	44	100	14	464	--	381
30...	1100	18	--	--	--	87	52	140	16	541	0	444
MAR. 04...	1200	16	--	--	--	150	95	190	20	829	0	680
APR. 20...	1315	7.9	--	--	--	39	20	57	7.2	197	--	162
MAY 29...	0930	5.7	30	90	20	44	24	41	11	232	0	190
JULY 01...	1330	14	--	--	--	35	18	33	8.7	171	0	140
AUG. 05...	0900	8.8	--	--	--	51	24	47	12	276	0	226
SEP. 02...	1600	9.0	--	--	--	46	21	40	11	235	--	193

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)
OCT. 30...	130	31	.2	.01	.13	541	.74	280	0	37	2.0	820
NOV. 21...	120	30	.2	.27	.14	566	.77	300	0	36	2.0	840
JAN. 09...	180	45	.2	.06	.13	725	.99	370	0	36	2.3	925
30...	240	67	.3	.04	.11	862	1.17	430	0	40	2.9	1280
MAR. 04...	340	110	.4	.07	.08	1350	1.84	770	86	34	3.0	1950
APR. 20...	96	34	.1	.42	.20	425	.58	180	18	40	1.9	450
MAY 29...	79	14	.2	.01	.03	349	.47	210	19	29	1.2	550
JULY 01...	71	16	.1	.14	.17	302	.41	160	21	29	1.1	460
AUG. 05...	85	19	.2	.01	.02	397	.54	230	0	30	1.4	600
SEP. 02...	82	12	.2	.04	.05	350	.48	200	9	29	1.2	570

JAMES RIVER BASIN

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06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	855	1020	---	1450	2000	980	348	587	505	695	555
2	932	855	990	---	1450	1920	981	363	581	242	669	541
3	935	856	1000	1150	1470	2050	981	405	585	247	655	552
4	935	856	990	1150	1470	2140	982	442	592	256	639	552
5	905	856	1000	1150	1500	2140	990	495	589	268	630	543
6	890	860	1000	1150	1540	2180	1000	549	589	277	636	539
7	900	860	1000	1160	1560	2240	1020	568	583	287	639	547
8	893	860	1010	1160	1580	2300	1020	571	582	307	652	547
9	890	857	1040	1170	1630	2290	1020	572	575	335	663	538
10	880	867	1040	1170	1650	2340	1020	580	572	365	639	532
11	875	861	1010	1200	1620	2360	1000	582	562	379	632	535
12	875	860	1000	1220	1700	2400	980	592	570	407	621	535
13	870	859	1000	1220	1720	2430	930	592	555	410	633	530
14	875	886	1000	1250	1750	2460	760	596	555	420	614	530
15	870	923	1000	1270	1770	2460	818	601	575	436	588	530
16	870	930	1010	1300	1780	2500	790	605	580	442	600	535
17	880	948	1020	1330	1810	2160	745	605	573	441	566	535
18	875	905	1040	1340	1790	2290	673	605	570	453	568	531
19	875	915	1040	1350	1850	2110	629	601	542	477	552	529
20	875	900	1040	1380	1840	2090	611	601	530	495	550	528
21	880	900	1040	1400	1870	2090	544	592	528	512	540	530
22	920	900	1040	1400	1870	1760	532	582	532	543	550	520
23	905	890	1040	1400	1870	1820	525	587	540	557	518	520
24	905	902	1060	1400	1940	---	341	587	542	600	512	510
25	905	913	1070	1400	1990	1390	242	558	540	615	528	510
26	945	914	1090	1380	1990	1310	255	550	546	649	552	505
27	935	930	1080	1400	2000	---	269	542	550	690	552	511
28	940	934	1080	1420	2050	1030	289	542	568	711	552	504
29	895	952	1080	1420	2050	1010	308	550	560	698	560	510
30	900	972	1090	1420	---	985	329	545	578	710	559	503
31	900	---	1120	1440	---	980	---	529	---	707	562	---
MONTH	898	893	1030	1300	1730	1970	719	550	564	466	594	530

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
(ONCE-DAILY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	9.5	0.5	---	2.0	0.5	2.0	7.0	16.5	24.5	25.0	22.5
2	17.5	6.0	2.0	---	0.5	0.5	1.0	8.0	16.5	26.0	25.0	20.0
3	17.5	6.0	1.0	1.5	1.0	0.5	1.0	9.5	17.5	27.0	23.0	20.0
4	16.5	6.0	1.5	0.0	0.0	1.0	1.5	11.0	18.5	27.0	20.0	17.5
5	16.5	5.0	2.5	1.0	0.5	1.5	1.5	12.0	20.0	27.0	23.5	17.0
6	14.5	5.0	2.5	1.0	1.0	1.5	1.5	12.0	18.5	27.0	24.0	17.5
7	14.0	5.0	2.5	1.0	1.0	1.5	2.0	12.0	18.5	27.0	23.5	17.0
8	18.5	5.5	3.0	1.0	0.0	1.0	2.0	12.0	19.0	26.5	23.5	17.0
9	19.0	5.5	1.5	1.0	1.0	1.5	1.0	12.5	17.5	26.5	23.5	16.0
10	12.0	5.0	1.5	1.5	1.0	1.0	3.0	15.0	17.0	24.5	23.5	20.0
11	11.5	4.0	3.0	1.0	0.5	1.0	3.0	14.0	18.5	24.0	23.0	16.0
12	10.0	3.0	2.5	1.5	0.5	1.0	3.0	15.0	20.0	22.0	24.5	14.5
13	19.0	1.0	2.5	0.5	0.5	0.5	2.5	15.5	20.0	22.5	22.5	13.5
14	18.0	1.0	2.0	0.0	1.0	1.0	3.0	16.0	20.0	22.0	22.5	13.5
15	17.0	1.0	2.0	0.0	0.5	2.0	3.5	18.5	19.0	24.5	23.5	17.5
16	19.0	2.0	2.0	0.0	0.0	2.0	3.5	16.0	19.5	24.5	22.5	17.0
17	18.5	2.0	1.5	0.0	0.5	4.5	3.5	17.0	19.5	26.5	21.5	18.5
18	19.0	5.5	1.5	0.0	1.0	4.5	2.5	17.0	21.5	27.0	20.5	15.0
19	18.5	5.0	0.5	0.5	0.5	4.5	3.0	18.0	20.0	25.5	20.5	13.5
20	18.5	5.0	0.5	0.5	0.5	4.0	4.0	18.0	22.0	24.5	20.5	11.5
21	17.0	5.0	2.0	0.5	1.0	4.0	5.0	16.5	24.5	25.0	20.5	8.5
22	19.5	6.5	1.0	0.0	1.0	4.0	4.0	16.0	24.5	26.0	21.0	12.5
23	18.5	3.5	1.5	1.0	0.5	3.0	3.5	16.0	25.5	25.0	23.5	12.0
24	18.5	3.0	1.0	1.5	1.0	---	3.5	17.0	24.5	24.0	23.5	12.5
25	18.5	3.0	1.5	0.5	1.0	3.0	3.5	17.0	25.0	23.5	19.5	12.5
26	16.5	4.5	1.0	0.5	1.0	2.5	5.5	16.0	25.0	24.5	19.0	13.0
27	17.0	4.0	1.0	1.5	1.0	---	7.0	16.5	26.0	24.5	19.5	13.5
28	12.0	2.5	1.0	0.5	1.0	3.0	8.0	17.5	25.0	24.5	20.5	13.0
29	10.5	1.5	0.0	0.5	---	3.0	7.5	18.5	23.5	25.5	20.5	13.0
30	11.5	2.5	1.0	1.0	---	1.0	7.5	16.0	23.5	25.5	23.0	11.0
31	12.5	---	1.5	2.0	---	1.0	---	18.0	---	25.5	21.0	---
MONTH	16.5	4.0	1.5	0.5	1.0	2.0	3.5	15.0	21.0	25.0	22.5	15.0

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	STAGE (FT ABOVE DATUM)	DIS- SOLVED SILICA (SIO ₂) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05056220 - SWEETWATER LAKE AT SWEETWATER, N. DAK. (LAT 48 12 37 LONG 098 52 15)											
DEC., 1974											
10...	1545	a11.62	14	0	50	20	38	39	81	27	276
JUNE, 1975											
16...	1700	a12.75	5.6	30	40	0	32	37	62	21	258
05056250 - LAKE ALICE NEAR CHURCHS FERRY, N. DAK. (LAT 48 21 07 LONG 099 05 42)											
DEC., 1974											
11...	1130	a13.80	26	600	120	1700	370	190	290	81	1670
JUNE, 1975											
16...	1530	a16.60	8.5	20	40	170	55	32	51	19	290
05056260 - LAKE IRVINE NEAR CHURCHS FERRY, N. DAK. (LAT 48 16 57 LONG 099 10 25)											
DEC., 1974											
11...	1030	a13.34	30	0	20	30	110	59	85	30	556
JUNE, 1975											
16...	1430	a15.58	9.9	30	110	20	52	31	34	11	196
05056500 - DEVILS LAKE NEAR DEVILS LAKE, N. DAK. (LAT 48 04 00 LONG 098 56 07)											
DEC., 1974											
11...	1345	b22.87	12	100	140	50	75	150	740	97	457
JUNE, 1975											
17...	1100	b24.65	12	10	40	5	72	150	600	87	393
05056505 - NARROWS OF DEVILS LAKE NEAR DEVILS LAKE, N. DAK. (LAT 48 01 36 LONG 098 53 44)											
DEC., 1974											
11...	1445	b22.87	12	10	30	10	75	160	750	93	459
JUNE, 1975											
17...	1140	b24.65	12	0	20	0	71	150	590	64	398
05056506 - MISSION BAY OF DEVILS LAKE NR DEVILS LAKE, N. DAK. (LAT 48 01 36 LONG 098 53 43)											
DEC., 1974											
11...	1545	b20.64	13	20	20	20	81	170	820	98	567
JUNE, 1975											
17...	1215	--	13	20	150	5	72	150	620	94	486
05056565 - EAST BAY OUTLET OF DEVILS LAKE NR CRARY, N. DAK. (LAT 48 00 13 LONG 098 41 50)											
DEC., 1974											
11...	1730	a24.94	14	30	40	20	110	320	1800	200	654
JUNE, 1975											
17...	1345	a25.41	15	10	60	240	100	320	1500	140	399
05056570 - EAST DEVILS LAKE NEAR HAMAR, N. DAK. (LAT 47 57 02 LONG 098 36 34)											
DEC., 1974											
12...	1215	b1.55	15	50	50	100	13	2000	12000	1000	1030
JUNE, 1975											
17...	1530	b1.31	13	40	170	70	23	1700	8800	790	770

a - Feet above arbitrary datum.

b - Add 1,400 ft to convert to mean sea level.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CaCO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05056220 - SWEETWATER LAKE AT SWEETWATER, N. DAK. (LAT 48 12 37 LONG 098 52 15)

DEC., 1974 10...	32	280	150	26	.1	.12	.09	589	.80	260	0
JUNE, 1975 16...	0	212	130	21	.1	.05	.04	479	.65	230	21

05056250 - LAKE ALICE NEAR CHURCHS FERRY, N. DAK. (LAT 48 21 07 LONG 099 05 42)

DEC., 1974 11...	--	1370	850	110	.3	.65	.71	2800	3.81	1700	340
JUNE, 1975 16...	0	238	120	18	.1	.31	.26	488	.66	270	31

05056260 - LAKE IRVINE NEAR CHURCHS FERRY, N. DAK. (LAT 48 16 57 LONG 099 10 25)

DEC., 1974 11...	--	456	240	30	.2	1.2	.54	890	1.21	520	62
JUNE, 1975 16...	0	161	150	14	.1	.56	.22	444	.60	260	97

05056500 - DEVILS LAKE NEAR DEVILS LAKE, N. DAK. (LAT 48 04 00 LONG 098 56 07)

DEC., 1974 11...	46	451	1500	330	.1	.21	.48	3370	4.58	810	360
JUNE, 1975 17...	41	391	1300	280	.1	.34	.47	2840	3.86	800	410

05056505 - NARROWS OF DEVILS LAKE NEAR DEVILS LAKE, N. DAK. (LAT 48 01 36 LONG 098 53 44)

DEC., 1974 11...	46	453	1600	330	.1	.18	.44	3370	4.58	850	400
JUNE, 1975 17...	39	391	1300	290	.1	.34	.47	2830	3.85	800	400

05056506 - MISSION BAY OF DEVILS LAKE NR DEVILS LAKE, N. DAK. (LAT 48 01 36 LONG 098 53 43)

DEC., 1974 11...	23	503	1700	360	.1	.17	.53	3690	5.02	900	430
JUNE, 1975 17...	43	470	1400	290	.1	.35	.50	2880	3.92	800	330

05056565 - EAST BAY OUTLET OF DEVILS LAKE NR CRARY, N. DAK. (LAT 48 00 13 LONG 098 41 50)

DEC., 1974 11...	78	666	3500	880	.1	.01	.38	7720	10.5	1600	930
JUNE, 1975 17...	0	327	3200	750	.1	.02	.57	6600	8.98	1600	1200

05056570 - EAST DEVILS LAKE NEAR HAMAR, N. DAK. (LAT 47 57 02 LONG 098 36 34)

DEC., 1974 12...	319	1380	27000	4400	2.4	.01	.14	51400	69.9	8300	6900
JUNE, 1975 17...	265	1070	21000	3200	--	.08	.07	36500	49.6	7100	6000

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05056220 - SWEETWATER LAKE AT SWEETWATER, N. DAK. (LAT 48 12 37 LONG 098 52 15)

DEC., 1974 10...	38	2.2	880	9.1	1.5	30	8	<100	160	0	<10
JUNE, 1975 16...	34	1.8	715	8.6	18.0	32	4	0	120	0	10

05056250 - LAKE ALICE NEAR CHURCHS FERRY, N. DAK. (LAT 48 21 07 LONG 099 05 42)

DEC., 1974 11...	26	3.1	3600	7.8	.0	100	14	<100	50	2	10
JUNE, 1975 16...	27	1.4	785	8.1	21.5	45	8	0	120	1	0

05056260 - LAKE IRVINE NEAR CHURCHS FERRY, N. DAK. (LAT 48 16 57 LONG 099 10 25)

DEC., 1974 11...	25	1.6	1280	8.2	1.5	50	14	<100	200	1	<10
JUNE, 1975 16...	21	.9	654	7.4	19.5	45	5	0	80	1	10

05056500 - DEVILS LAKE NEAR DEVILS LAKE, N. DAK. (LAT 48 04 00 LONG 098 56 07)

DEC., 1974 11...	63	11	4600	8.8	.0	40	32	<100	0	1	<10
JUNE, 1975 17...	59	9.2	3900	8.6	18.0	37	15	0	530	0	10

05056505 - NARROWS OF DEVILS LAKE NEAR DEVILS LAKE, N. DAK. (LAT 48 01 36 LONG 098 53 44)

DEC., 1974 11...	63	11	4700	8.8	.0	30	28	<100	670	0	<10
JUNE, 1975 17...	59	9.1	3780	8.7	19.0	35	15	0	530	0	10

05056506 - MISSION BAY OF DEVILS LAKE NR DEVILS LAKE, N. DAK. (LAT 48 01 36 LONG 098 53 43)

DEC., 1974 11...	63	12	4800	8.7	.0	40	32	<100	800	2	<10
JUNE, 1975 17...	60	9.6	4000	8.5	19.0	45	21	0	520	0	10

05056565 - EAST BAY OUTLET OF DEVILS LAKE NR CRARY, N. DAK. (LAT 48 00 13 LONG 098 41 50)

DEC., 1974 11...	68	20	9400	9.0	.0	40	38	<100	20	3	<10
JUNE, 1975 17...	65	17	8200	8.3	21.5	68	21	0	1300	0	10

05056570 - EAST DEVILS LAKE NEAR HAMAR, N. DAK. (LAT 47 57 02 LONG 098 36 34)

DEC., 1974 12...	73	57	42000	9.2	-1.0	70	180	<100	570	1	10
JUNE, 1975 17...	70	46	50200	9.0	20.0	29	170	0	4100	1	30

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

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CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED COBALT (CO) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05056220 - SWEETWATER LAKE AT SWEETWATER, N. DAK. (LAT 48 12 37 LONG 098 52 15)

DEC., 1974 10...	4	2	14	60	<.1	2	0	0	260	3.4	20
JUNE, 1975 16...	0	4	3	50	.0	1	1	0	210	.0	10

05056250 - LAKE ALICE NEAR CHURCHS FERRY, N. DAK. (LAT 48 21 07 LONG 099 05 42)

DEC., 1974 11...	2	13	4	250	<.1	11	44	1	1400	2.0	30
JUNE, 1975 16...	0	3	1	50	.0	1	3	0	230	2.0	10

05056260 - LAKE IRVINE NEAR CHURCHS FERRY, N. DAK. (LAT 48 16 57 LONG 099 10 25)

DEC., 1974 11...	1	3	0	70	<.1	5	6	1	440	5.6	30
JUNE, 1975 16...	1	6	6	40	.0	2	3	0	200	1.9	30

05056500 - DEVILS LAKE NEAR DEVILS LAKE, N. DAK. (LAT 48 04 00 LONG 098 56 07)

DEC., 1974 11...	0	1	1	32	<.1	4	10	0	430	6.3	30
JUNE, 1975 17...	2	3	5	250	.0	1	0	0	390	4.4	0

05056505 - NARROWS OF DEVILS LAKE NEAR DEVILS LAKE, N. DAK. (LAT 48 01 36 LONG 098 53 44)

DEC., 1974 11...	1	1	0	320	<.1	4	10	0	390	4.0	30
JUNE, 1975 17...	2	3	2	270	.0	2	0	0	380	3.6	0

05056506 - MISSION BAY OF DEVILS LAKE NR DEVILS LAKE, N. DAK. (LAT 48 01 36 LONG 098 53 43)

DEC., 1974 11...	0	18	1	340	<.1	3	4	--	450	3.0	30
JUNE, 1975 17...	2	4	2	260	.1	2	0	0	400	4.1	0

05056565 - EAST BAY OUTLET OF DEVILS LAKE NR CRARY, N. DAK. (LAT 48 00 13 LONG 098 41 50)

DEC., 1974 11...	1	21	1	67	<.1	8	31	1	510	4.1	40
JUNE, 1975 17...	1	2	2	530	.0	2	0	0	580	4.4	10

05056570 - EAST DEVILS LAKE NEAR HAMAR, N. DAK. (LAT 47 57 02 LONG 098 36 34)

DEC., 1974 12...	1	3	1	4600	<.1	9	9	1	140	40	70
JUNE, 1975 17...	2	8	8	3400	.0	6	0	0	110	38	50

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	STAGE (FT ABOVE DATUM)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05056630 - EASTERN STUMP LAKE NEAR LAKOTA, N. DAK. (LAT 47 52 04 LONG 098 21 33)

DEC., 1974											
12...	0915	C84.43	14	0	80	160	100	5200	16000	1200	816
JUNE, 1975											
18...	1030	C85.04	12	0	150	130	580	4200	18000	980	521

05056670 - WESTERN STUMP LAKE NEAR LAKOTA, N. DAK. (LAT 47 54 48 LONG 098 23 26)

DEC., 1974											
12...	1045	C99.30	3.5	0	30	20	130	420	2000	130	409
JUNE, 1975											
18...	1030	C99.95	10	20	100	40	120	370	1500	120	299

DATE	CAR- BONATE (CO3) (MG/L)	ALKA- LITY AS CACO3 (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)
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05056630 - EASTERN STUMP LAKE NEAR LAKOTA, N. DAK. (LAT 47 52 04 LONG 098 21 33)

DEC., 1974											
12...	106	846	39000	10000	4.7	.01	.42	79400	108	22000	21000
JUNE, 1975											
18...	147	672	43000	7500	--	.01	.25	81000	110	19000	18000

05056670 - WESTERN STUMP LAKE NEAR LAKOTA, N. DAK. (LAT 47 54 48 LONG 098 23 26)

DEC., 1974											
12...	42	405	4500	1100	.1	.04	.07	8790	12.0	2100	1700
JUNE, 1975											
18...	67	357	3500	780	.1	.01	.19	6740	9.17	1800	1500

c - Add 1,300.00 ft to convert to mean sea level.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

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CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05056630 - EASTERN STUMP LAKE NEAR LAKOTA, N. DAK. (LAT 47 52 04 LONG 098 21 33)

DEC., 1974 12...	60	47	56000	8.7	-2.0	40	250	<100	990	1	50
JUNE, 1975 18...	66	57	75000	8.7	19.0	45	130	0	7300	0	80

05056670 - WESTERN STUMP LAKE NEAR LAKOTA, N. DAK. (LAT 47 54 48 LONG 098 23 26)

DEC., 1974 12...	66	19	10200	8.9	-1.0	30	23	<100	740	2	10
JUNE, 1975 18...	62	15	8500	8.7	19.0	65	30	0	1200	0	0

DATE	DIS- SOLVED COBALT (CO) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
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05056630 - EASTERN STUMP LAKE NEAR LAKOTA, N. DAK. (LAT 47 52 04 LONG 098 21 33)

DEC., 1974 12...	1	3	1	8500	<.1	15	11	1	660	62	80
JUNE, 1975 18...	2	2	4	6000	.0	7	5	0	400	140	50

05056670 - WESTERN STUMP LAKE NEAR LAKOTA, N. DAK. (LAT 47 54 48 LONG 098 23 26)

DEC., 1974 12...	1	10	4	830	<.1	12	10	0	610	20	30
JUNE, 1975 18...	2	7	2	570	.0	7	6	0	930	8.8	10

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	STAGE (FT ABOVE DATUM)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)
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PART 6. MISSOURI RIVER BASIN

JAMES RIVER BASIN

06469000 - JAMESTOWN RESERVOIR NEAR JAMESTOWN, N. DAK.

NOV. 22...	1015	b 29.62	.1	--	10	400	45	24	51	11	270	16
MAY 28...	1400	b 38.68	5.7	20	60	280	32	21	34	10	205	0

DATE	ALKAL- INITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT) (MG/L)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO
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06469000 - JAMESTOWN RESERVOIR NEAR JAMESTOWN, N. DAK.

NOV. 22...	248	77	11	.2	.03	.10	391	.53	210	0	33	1.5
MAY 28...	168	60	8.4	.1	.22	.11	288	.39	170	0	29	1.1

DATE	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	CYANIDE (CN) (MG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BERYL- LIUM (BE) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)
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06469000 - JAMESTOWN RESERVOIR NEAR JAMESTOWN, N. DAK.

NOV. 22...	560	--	2.0	20	--	--	--	--	110	--	--	--
MAY 28...	420	8.1	18.5	20	.00	2	0	0	90	0	0	0

DATE	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
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06469000 - JAMESTOWN RESERVOIR NEAR JAMESTOWN, N. DAK.

NOV. 22...	--	--	--	--	--	--	--	--	--	--	--
MAY 28...	3	3	30	1.1	1	2	0	1	200	.0	10

b - Add 1,400.00 ft to convert to mean sea level.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05056405 - BIG COULEE AT GRAHAMS IS INLET NR FT TOTTEN, N. DAK. (LAT 48 02 25 LONG 099 02 50)

DEC., 1974										
11...	0845	E30	8.3	40	10	87	110	450	66	540
JUNE, 1975										
17...	0940	--	6.8	150	150	62	36	63	19	278

05099380 - PEMBINA RIVER NEAR VANG, N. DAK. (LAT 48 55 00 LONG 098 03 23)

DEC., 1974										
17...	1615	13	22	60	280	110	50	69	10	423
APR., 1975										
14...	1110	254	11	100	80	38	14	28	6.3	128
22...	1215	620	13	80	90	47	19	38	6.7	139
MAY										
08...	1230	1000	18	40	5	60	27	40	6.8	190
JUNE										
05...	1815	813	18	50	0	66	37	46	9.2	233
SEP.										
10...	1645	40	21	30	60	72	39	56	10	265

05099400 - LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, N DAK (LAT 48 51 55 LONG 098 00 20)

DEC., 1974										
16...	1545	.48	22	30	160	110	28	53	6.5	327
APR., 1975										
12...	1240	197	8.6	170	70	30	7.3	19	5.7	89
17...	1105	73	--	--	--	--	--	--	--	--
22...	1015	97	16	40	30	52	16	49	6.4	148
MAY										
08...	1120	21	20	70	40	73	22	64	6.7	225
JUNE										
06...	1240	3.7	21	20	30	93	26	68	10	263
SEP.										
10...	1200	16	--	0	40	80	25	62	8.7	301

DATE	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)
------	--	--	---	---	--	---	--	--	--	--

05056405 - BIG COULEE AT GRAHAMS IS INLET NR FT TOTTEN, N. DAK. (LAT 48 02 25 LONG 099 02 50)

DEC., 1974										
11...	0	443	1000	200	.1	.16	.32	2290	3.11	--
JUNE, 1975										
17...	0	228	170	26	.1	.08	.39	561	.76	--

05099380 - PEMBINA RIVER NEAR VANG, N. DAK. (LAT 48 55 00 LONG 098 03 23)

DEC., 1974										
17...	--	347	260	17	.2	.03	.11	772	1.05	27.1
APR., 1975										
14...	0	105	110	6.0	.1	1.5	.37	303	.41	208
22...	0	114	140	10	.2	1.3	.19	371	.50	621
MAY										
08...	0	156	180	11	.1	.35	.09	462	.63	1250
JUNE										
05...	0	191	210	10	.2	.09	.14	542	.74	1190
SEP.										
10...	13	239	210	11	.2	.02	.11	592	.81	63.9

05099400 - LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, N DAK (LAT 48 51 55 LONG 098 00 20)

DEC., 1974										
16...	--	268	200	18	.3	1.2	.14	622	.85	.81
APR., 1975										
12...	0	73	63	4.8	.1	1.5	.33	196	.27	104
17...	--	--	--	--	--	--	--	--	--	--
22...	0	121	150	13	.2	2.1	.22	409	.56	107
MAY										
08...	0	185	200	15	.3	.98	.18	540	.73	30.6
JUNE										
06...	0	216	250	20	.4	.00	.16	642	.87	6.41
SEP.										
10...	--	247	170	16	--	--	--	--	--	--

E - Estimated.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	DIS- SOLVED BORON (B) (UG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05056405 - BIG COULEE AT GRAHAMS IS INLET NR FT TOTTEN, N. DAK. (LAT 48 02 25 LONG 099 02 50)

DEC., 1974 11...	670	230	56	7.6	3200	8.5	1.0	50	450
JUNE, 1975 17...	300	75	30	1.6	825	7.9	19.0	2	100

05099380 - PEMBINA RIVER NEAR VANG, N. DAK. (LAT 48 55 00 LONG 098 03 23)

DEC., 1974 17...	480	130	23	1.4	1130	7.8	.0	20	160
APR., 1975 14...	150	48	28	1.0	420	8.2	.0	50	90
22...	200	82	29	1.2	520	8.2	.5	45	100
MAY 08...	260	110	24	1.1	630	8.0	12.5	30	100
JUNE 05...	320	130	23	1.1	760	7.6	15.0	15	80
SEP. 10...	340	100	26	1.3	850	--	17.0	12	150

05099400 - LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, N DAK (LAT 48 51 55 LONG 098 00 20)

DEC., 1974 16...	390	120	22	1.2	900	7.8	.0	3	120
APR., 1975 12...	110	32	27	.8	280	8.1	.0	65	70
17...	--	--	--	--	540	8.1	.5	--	--
22...	200	74	34	1.5	592	8.3	.5	35	100
MAY 08...	270	88	33	1.7	715	8.0	9.0	15	140
JUNE 06...	340	120	30	1.6	910	7.8	15.0	4	150
SEP. 10...	300	56	30	1.6	750	--	16.0	10	150

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05051600 - WILD RICE RIVER NEAR RUTLAND, N. DAK. (LAT 46 01 20 LONG 097 30 40)

APR., 1975										
25...	1115	.32	9.3	10	20	50	53	25	47	9.0
JUNE										
17...	1245	1.3	4.8	--	0	100	110	77	65	21
SEP.										
23...	1720	3.1	11	0	30	100	92	69	84	23

05123600 - EGG CREEK NEAR GRANVILLE, N. DAK. (LAT 48 21 18 LONG 100 49 19)

APR., 1975										
29...	1130	720	11	20	40	10	33	20	26	7.7
AUG.										
14...	0930	1.6	5.3	0	50	60	86	90	150	14

05123760 - DEEP RIVER BELOW CUTBANK CREEK NR UPHAM, N. DAK. (LAT 48 36 14 LONG 100 47 41)

MAY, 1975										
07...	1840	E1100	13	10	40	10	43	33	44	12
JUNE										
06...	0850	E90	8.1	--	--	--	55	55	73	17
JULY										
22...	1200	E40	16	--	--	--	62	63	99	17
AUG.										
13...	1245	E12	13	10	70	20	59	66	100	21
SEP.										
10...	1800	6.0	13	--	--	--	56	63	110	25

DATE	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
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05051600 - WILD RICE RIVER NEAR RUTLAND, N. DAK. (LAT 46 01 20 LONG 097 30 40)

APR., 1975										
25...	106	0	87	200	24	.2	--	.44	.21	--
JUNE										
17...	272	0	223	480	22	.2	.59	--	--	.12
SEP.										
23...	280	0	230	460	34	.2	--	.01	.10	--

05123600 - EGG CREEK NEAR GRANVILLE, N. DAK. (LAT 48 21 18 LONG 100 49 19)

APR., 1975										
29...	112	0	92	120	8.1	.1	--	.43	.12	--
AUG.										
14...	503	0	413	430	44	.3	--	.00	1.3	--

05123760 - DEEP RIVER BELOW CUTBANK CREEK NR UPHAM, N. DAK. (LAT 48 36 14 LONG 100 47 41)

MAY, 1975										
07...	196	0	161	150	24	.1	--	.59	.15	--
JUNE										
06...	361	--	296	180	32	.1	--	.01	.16	--
JULY										
22...	453	0	372	190	48	.2	--	.01	.33	--
AUG.										
13...	464	0	381	190	46	.3	--	.02	.30	--
SEP.										
10...	435	13	378	210	43	.1	--	.03	.28	--

E - Estimated.

358 ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY STREAM STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN
RED RIVER OF THE NORTH BASIN

05051600 - WILD RICE RIVER NEAR RUTLAND, N. DAK. (LAT 46 01 20 LONG 097 30 40)

APR., 1975										
25...	442	.60	.38	240	150	29	1.3	660	6.8	7.0
JUNE										
17...	943	1.28	3.31	590	370	19	1.2	1270	7.7	20.0
SEP.										
23...	969	1.32	8.11	510	280	25	1.6	1460	7.8	16.0

05123600 - EGG CREEK NEAR GRANVILLE, N. DAK. (LAT 48 21 18 LONG 100 49 19)

APR., 1975										
29...	306	.42	595	170	73	24	.9	480	7.8	5.0
AUG.										
14...	1130	1.54	4.97	590	170	35	2.7	1550	8.3	19.5

05123760 - DEEP RIVER BELOW CUTBANK CREEK NR UPHAM, N. DAK. (LAT 48 36 14 LONG 100 47 41)

MAY, 1975										
07...	437	.59	--	240	83	27	1.2	0	7.8	11.5
JUNE										
06...	660	.90	160	360	68	29	1.7	960	--	16.0
JULY										
22...	770	1.05	--	410	43	33	2.1	1130	8.3	23.5
AUG.										
13...	773	1.05	--	420	39	33	2.1	1100	8.1	21.5
SEP.										
10...	837	1.14	13.6	400	21	36	2.4	1200	8.5	16.5

DATE	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	CYANIDE (CN) (MG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)
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05051600 - WILD RICE RIVER NEAR RUTLAND, N. DAK. (LAT 46 01 20 LONG 097 30 40)

APR., 1975										
25...	25	15	.01	3	0	120	0	0	0	8
JUNE										
17...	--	--	--	--	--	320	--	--	--	--
SEP.										
23...	35	6	.00	5	<100	230	1	10	0	3

05123600 - EGG CREEK NEAR GRANVILLE, N. DAK. (LAT 48 21 18 LONG 100 49 19)

APR., 1975										
29...	65	34	.00	2	100	110	0	0	0	3
AUG.										
14...	65	2	.00	8	<100	250	0	0	0	0

05123760 - DEEP RIVER BELOW CUTBANK CREEK NR UPHAM, N. DAK. (LAT 48 36 14 LONG 100 47 41)

MAY, 1975										
07...	45	--	.01	0	0	90	0	0	2	3
JUNE										
06...	55	--	--	--	--	100	--	--	--	--
JULY										
22...	65	--	--	--	--	150	--	--	--	--
AUG.										
13...	65	--	.00	7	<100	140	0	0	0	1
SEP.										
10...	60	--	--	--	--	70	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY STREAM STATIONS

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE DISTRIBUTION OF SUSPENDED SEDIMENT AND BED MATERIAL
WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

	SUS- PENDENT SEDI- MENT CHARGE (MG/L)	SUS- PENDENT SEDI- MENT CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM
DATE	TIME								

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05054000 - RED RIVER OF THE NORTH AT FARGO, N. DAK. (LAT 46 51 40 LONG 096 47 00)

JULY, 1975										
03...	1400	141	4760	--	--	--	--	--	--	98

05060000 - MAPLE RIVER NEAR MAPLETON, N. DAK. (LAT 46 51 40 LONG 097 06 10)

JULY, 1975									
03...	1115	120	3760	--	--	--	--	--	96

05099380 - PEMBINA RIVER NEAR VANG, N. DAK. (LAT 48 55 00 LONG 098 03 23)

DEC., 1974									
17...	1615	60	2.1	--	--	--	--	--	--
APR., 1975									
14...	1110	208	143	--	--	--	--	--	--
17...	1530	380	--	--	--	--	--	--	--
25...	1050	957	--	59	81	89	92	100	--
MAY									
08...	1230	1120	3020	--	--	--	--	--	--
JUNE									
05...	1815	498	1090	54	77	88	91	94	100
SEP.									
10...	1645	24	2.6	--	--	--	--	--	--

05099400 - LITTLE SOUTH PEMBINA RIVER NEAR WALTHALLA, N DAK (LAT 48 51 55 LONG 098 00 20)

DEC., 1974										
16...	1545	50	.06	--	--	--	--	--	--	--
APR., 1975										
12...	1240	452	240	64	89	97	98	100	--	--
17...	1105	346	68	--	--	--	--	--	--	--
22...	1015	361	95	71	98	100	--	--	--	--
MAY										
OR...	1120	72	4.1	--	--	--	--	--	--	--
JUNE										
06...	1240	47	.47	--	--	--	--	--	--	--
SEP.										
10...	1200	38	1.6	--	--	--	--	--	--	--

	BED	BED	BED	BED	BED	BED	BED	BED	BED	BED	
	MAT.	MAT.	MAT.	MAT.	MAT.	MAT.	MAT.	MAT.	MAT.	MAT.	
	FALL	FALL	FALL	FALL	FALL	FALL	SIEVE	SIEVE	SIEVE	SIEVE	
	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	
	% FINER	% FINER	% FINER	% FINER	% FINER	% FINER	% FINER	% FINER	% FINER	% FINER	
	THAN	THAN	THAN	THAN	THAN	THAN	THAN	THAN	THAN	THAN	
DATE	.004 MM	.062 MM	.125 MM	.250 MM	.500 MM	1.00 MM	2.00 MM	4.00 MM	8.00 MM	16.0 MM	32.0 MM

05099380 - PEMBINA RIVER NEAR VANG, N. DAK. (LAT 48 55 00 LONG 098 03 23)

[illegible]

05099400 - LITTLE SOUTH PEMBINA RIVER NEAR WALTHALLA, N DAK (LAT 48 51 55 LONG 098 00 20)

[illegible]

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05051500 - RED RIVER OF THE NORTH AT WAMPETON, N. DAK. (LAT 46 15 55 LONG 096 35 40)

APR., 1975										
16...	1640	1540	2.0	60	70	36	22	8.3	3.6	150
SEP.										
23...	1300	334	11	100	40	36	29	8.5	3.4	241

05051700 - WILD RICE RIVER NEAR CAYUGA, N. DAK. (LAT 46 07 30 LONG 097 21 40)

APR., 1975										
25...	1345	5.9	3.4	250	240	56	41	62	9.7	121
JUNE										
17...	1455	.53	24	20	280	120	46	62	12	366
SEP.										
23...	1525	.03	17	0	280	110	50	65	14	349

05054500 - SHEYENNE RIVER ABOVE HARVEY, N. DAK. (LAT 47 42 10 LONG 099 56 55)

APR., 1975										
23...	1600	60	5.2	420	130	29	21	89	7.9	265
AUG.										
07...	1515	1.4	9.9	170	80	30	43	260	14	728

05055520 - BIG COULEE NR FT. TOTTEN, N. DAK. (LAT 47 52 57 LONG 098 58 02)

APR., 1975										
13...	1615	43	2.7	170	140	18	8.5	2.9	4.1	92
SEP.										
12...	1030	.32	24	60	120	81	24	25	4.6	383

05056100 - MAUVAIS COULEE NEAR CANDU, N. DAK. (LAT 48 26 53 LONG 099 06 08)

APR., 1975										
20...	1040	358	3.5	40	120	44	27	20	8.5	126
SEP.										
12...	0910	.10	5.2	100	40	90	64	65	7.2	295

05056200 - EDMORE COULEE NEAR EDMORE, N. DAK. (LAT 48 20 14 LONG 098 39 33)

APR., 1975										
20...	1305	145	4.3	170	10	42	18	23	9.8	134
JUNE										
12...	1310	.48	13	170	520	83	40	74	12	362

05057200 - BALDHILL CREEK NEAR DAZEY, N. DAK. (LAT 47 13 45 LONG 098 07 28)

APR., 1975										
17...	1520	655	3.2	290	440	30	11	7.9	6.9	107
SEP.										
04...	1225	3.4	8.3	120	170	61	43	68	8.3	353

05058000 - SHEYENNE RIVER BELOW BALDHILL DAM, N. DAK. (LAT 47 01 50 LONG 098 05 50)

MAY, 1975										
06...	1735	1180	4.2	130	380	41	26	48	8.4	231

05058500 - SHEYENNE RIVER AT VALLEY CITY, N. DAK. (LAT 46 54 50 LONG 098 00 30)

MAY, 1975										
06...	0955	1800	3.8	150	340	43	27	50	8.5	239
SEP.										
17...	1135	20	4.2	120	460	50	26	52	7.4	257

05059500 - SHEYENNE RIVER AT WEST FARGO, N. DAK. (LAT 46 53 28 LONG 096 54 24)

APR., 1975										
24...	1355	1850	3.2	340	260	47	18	37	7.5	193
SEP.										
25...	1845	101	15	80	200	87	35	51	6.0	333

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINIT AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05051500 - RED RIVER OF THE NORTH AT WAMPETON, N. DAK. (LAT 46 15 55 LONG 096 35 40)

APR., 1975									
16...	0	123	68	7.2	.1	.52	.10	243	.33
SEP.									
23...	0	198	21	5.4	.1	.43	--	222	.30

05051700 - WILD RICE RIVER NEAR CAYUGA, N. DAK. (LAT 46 07 30 LONG 097 21 40)

APR., 1975									
25...	0	99	300	45	.1	1.8	.29	609	.83
JUNE									
17...	0	300	290	25	.4	.72	--	795	1.08
SEP.									
23...	0	286	300	30	.2	1.0	--	810	1.10

05054500 - SHEYENNE RIVER ABOVE HARVEY, N. DAK. (LAT 47 42 10 LONG 099 56 55)

APR., 1975									
23...	0	217	120	20	.2	.84	.15	424	.58
AUG.									
07...	0	597	190	24	.2	.23	--	944	1.28

05055520 - BIG COULEE NR FT. TOTTEN, N. DAK. (LAT 47 52 57 LONG 098 58 02)

APR., 1975									
13...	0	75	9.9	2.9	.0	1.2	.08	125	.17
SEP.									
12...	0	314	23	12	.1	.56	--	423	.58

05056100 - MAUVAIS COULEE NEAR CANDU, N. DAK. (LAT 48 26 53 LONG 099 06 08)

APR., 1975									
20...	0	103	140	13	.0	2.5	.36	358	.49
SEP.									
12...	0	242	340	25	.1	.45	--	855	1.16

05056200 - EDMORE COULEE NEAR EDMORE, N. DAK. (LAT 48 20 14 LONG 098 39 33)

APR., 1975									
20...	0	110	93	13	.0	2.7	.39	322	.44
JUNE									
12...	0	297	210	25	.1	.29	--	648	.88

05057200 - BALDHILL CREEK NEAR DAZEY, N. DAK. (LAT 47 13 45 LONG 098 07 28)

APR., 1975									
17...	0	88	44	7.0	.0	1.7	.21	182	.25
SEP.									
04...	0	290	160	20	.1	.34	--	613	.83

05058000 - SHEYENNE RIVER BELOW BALDHILL DAM, N. DAK. (LAT 47 01 50 LONG 098 05 50)

MAY, 1975									
06...	0	190	100	14	.1	1.5	.15	386	.53

05058500 - SHEYENNE RIVER AT VALLEY CITY, N. DAK. (LAT 46 54 50 LONG 098 00 30)

MAY, 1975									
06...	0	196	110	12	.1	.90	.16	393	.53
SEP.									
17...	0	211	120	13	.1	.54	--	403	.55

05059500 - SHEYENNE RIVER AT WEST FARGO, N. DAK. (LAT 46 53 28 LONG 096 54 24)

APR., 1975									
24...	0	158	97	12	.1	1.5	.13	328	.45
SEP.									
25...	0	273	150	27	.1	.66	--	525	.71

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05051500 - RED RIVER OF THE NORTH AT WAMPETON, N. DAK. (LAT 46 15 55 LONG 096 35 40)

APR., 1975									
16...	1010	180	57	9	.3	400	7.8	.5	0
SEP.									
23...	200	210	12	8	.3	480	7.9	14.0	40

05051700 - WILD RICE RIVER NEAR CAYUGA, N. DAK. (LAT 46 07 30 LONG 097 21 40)

APR., 1975									
25...	9.70	310	210	30	1.5	850	7.5	6.5	630
JUNE									
17...	1.14	490	190	21	1.2	1090	8.4	21.0	120
SEP.									
23...	.07	480	190	22	1.3	1220	7.9	15.5	120

05054500 - SHEYENNE RIVER ABOVE HARVEY, N. DAK. (LAT 47 42 10 LONG 099 56 55)

APR., 1975									
23...	68.7	160	0	53	3.1	640	8.0	7.0	0
AUG.									
07...	3.59	250	0	68	7.1	1450	8.3	24.5	760

05055520 - BIG COULEE NR FT. TOTTEN, N. DAK. (LAT 47 52 57 LONG 098 58 02)

APR., 1975									
13...	14.5	80	4	7	.1	190	7.4	1.0	1100
SEP.									
12...	.37	300	0	15	.6	700	7.8	8.5	40

05056100 - MAUVAIS COULEE NEAR CANDO, N. DAK. (LAT 48 26 53 LONG 099 06 08)

APR., 1975									
20...	346	220	120	16	.6	510	7.5	2.5	390
SEP.									
12...	.23	490	250	22	1.3	1100	--	10.0	80

05056200 - EDMORE COULEE NEAR EDMORE, N. DAK. (LAT 48 20 14 LONG 098 39 33)

APR., 1975									
20...	126	180	69	21	.7	460	7.5	6.5	980
JUNE									
12...	.84	370	75	29	1.7	1000	7.7	20.0	0

05057200 - BALDHILL CREEK NEAR DAZEY, N. DAK. (LAT 47 13 45 LONG 098 07 28)

APR., 1975									
17...	322	120	32	12	.3	290	7.6	1.0	830
SEP.									
04...	5.63	330	40	30	1.6	900	--	15.0	320

05058000 - SHEYENNE RIVER BELOW BALDHILL DAM, N. DAK. (LAT 47 01 50 LONG 098 05 50)

MAY, 1975									
06...	1230	210	20	32	1.4	600	7.9	7.5	80

05058500 - SHEYENNE RIVER AT VALLEY CITY, N. DAK. (LAT 46 54 50 LONG 098 00 30)

MAY, 1975									
06...	1910	220	22	32	1.5	610	7.7	7.0	240
SEP.									
17...	22.2	230	21	32	1.5	730	7.9	17.0	160

05059500 - SHEYENNE RIVER AT WEST FARGO, N. DAK. (LAT 46 53 28 LONG 096 54 24)

APR., 1975									
24...	1640	190	33	29	1.2	500	8.0	.0	200
SEP.									
25...	143	360	88	23	1.2	960	7.7	11.5	0

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SIO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05059600 - MAPLE RIVER NEAR HOPE, N. DAK. (LAT 47 19 30 LONG 097 47 25)

APR., 1975										
13...	1150	31	4.5	270	180	33	14	8.7	4.2	95
JUNE										
13...	1120	.03	20	190	160	180	97	190	9.8	568

05059700 - MAPLE RIVER NEAR ENDERLIN, N. DAK. (LAT 46 37 18 LONG 097 34 25)

SEP., 1975										
25...	1155	5.4	19	40	1300	170	67	92	10	434

05060000 - MAPLE RIVER NEAR MAPLETON, N. DAK. (LAT 46 51 40 LONG 097 06 10)

MAY, 1975										
05...	1540	586	12	110	740	93	41	51	10	196
SEP.										
16...	1315	21	13	40	250	92	63	96	9.0	272

05060500 - RUSH RIVER AT AMENIA, N. DAK. (LAT 47 01 00 LONG 097 12 50)

APR., 1975										
18...	1515	2330	3.1	110	120	40	12	8.4	5.7	114

05064500 - RED RIVER OF THE NORTH AT HALSTAD, MINN. (LAT 47 21 10 LONG 096 50 50)

APR., 1975										
23...	1500	24500	3.8	130	60	40	17	10	5.1	135
SEP.										
19...	1330	728	8.1	20	40	58	33	25	4.6	290

05065500 - GOOSE RIVER NEAR PORTLAND, N. DAK. (LAT 47 32 20 LONG 097 27 20)

MAR., 1975										
21...	1415	14	11	170	0	83	35	22	15	216
SEP.										
19...	1040	.03	14	80	1500	160	58	49	8.0	445

05066500 - GOOSE RIVER AT HILLSBORO, N. DAK. (LAT 47 24 20 LONG 097 03 40)

APR., 1975										
14...	1625	728	4.4	230	210	50	18	17	8.7	151
SEP.										
19...	1350	2.1	18	60	600	130	72	110	9.4	422

05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, N. DAK. (LAT 47 56 34 LONG 097 03 10)

APR., 1975										
24...	1700	40600	6.7	150	60	43	18	10	5.1	142
SEP.										
24...	1500	2230	3.4	40	40	45	19	9.4	2.6	212

05083600 - MIDDLE BRANCH FOREST RIVER NEAR WHITMAN, N. DAK. (LAT 48 14 50 LONG 098 07 00)

APR., 1975										
16...	1310	20	4.6	150	70	43	15	25	4.7	112
JULY										
18...	1430	4.1	20	40	60	61	26	42	6.9	319

05089000 - SOUTH BRANCH PARK RIVER BELOW HOMME DAM, N. DAK. (LAT 48 24 07 LONG 097 46 55)

APR., 1975										
23...	1600	300	4.9	100	350	42	13	25	5.1	122
SEP.										
04...	1635	1.8	14	130	280	62	21	36	6.6	199

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	CAR- BONATE (CO3) (MG/L)	ALKA- LITY AS CACO3 (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05059600 - MAPLE RIVER NEAR HOPE, N. DAK. (LAT 47 19 30 LONG 097 47 25)

APR., 1975 13...	0	78	66	5.3	.1	1.6	.16	223	.30
JUNE 13...	0	466	700	62	.1	.16	--	1570	2.14

05059700 - MAPLE RIVER NEAR ENDERLIN, N. DAK. (LAT 46 37 18 LONG 097 34 25)

SEP., 1975 25...	0	356	450	71	.1	1.1	--	1160	1.58
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05060000 - MAPLE RIVER NEAR MAPLETON, N. DAK. (LAT 46 51 40 LONG 097 06 10)

MAY, 1975 05...	0	161	300	33	.1	2.3	.15	691	.94
SEP. 16...	0	223	370	74	.1	.95	--	880	1.20

05060500 - RUSH RIVER AT AMENIA, N. DAK. (LAT 47 01 00 LONG 097 12 50)

APR., 1975 18...	0	94	63	16	.1	3.4	.22	238	.32
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05064500 - RED RIVER OF THE NORTH AT HALSTAD, MINN. (LAT 47 21 10 LONG 096 50 50)

APR., 1975 23...	0	111	63	7.9	.1	3.8	.22	245	.33
SEP. 19...	0	238	78	15	.1	.56	--	412	.56

05065500 - GOOSE RIVER NEAR PORTLAND, N. DAK. (LAT 47 32 20 LONG 097 27 20)

MAR., 1975 21...	0	177	200	11	.2	3.4	.42	507	.69
SEP. 19...	0	365	340	22	.1	.56	--	930	1.26

05066500 - GOOSE RIVER AT HILLSBORO, N. DAK. (LAT 47 24 20 LONG 097 03 40)

APR., 1975 14...	0	124	90	23	.2	2.3	.31	320	.44
SEP. 19...	0	346	400	72	.2	.79	--	1090	1.48

05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, N. DAK. (LAT 47 56 34 LONG 097 03 10)

APR., 1975 24...	0	117	66	6.3	.3	4.1	.20	279	.38
SEP. 24...	0	174	28	5.1	.6	.54	--	244	.33

05083600 - MIDDLE BRANCH FOREST RIVER NEAR WHITMAN, N. DAK. (LAT 48 14 50 LONG 098 07 00)

APR., 1975 16...	0	92	120	4.9	.1	2.7	.23	312	.42
JULY 18...	0	262	78	11	.1	.23	--	433	.59

05089000 - SOUTH BRANCH PARK RIVER BELOW HOMME DAM, N. DAK. (LAT 48 24 07 LONG 097 46 55)

APR., 1975 23...	0	100	100	8.3	.1	2.1	.22	276	.38
SEP. 04...	0	163	140	11	.1	.75	--	474	.64

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05059600 - MAPLE RIVER NEAR HOPE, N. DAK. (LAT 47 19 30 LONG 097 47 25)

APR., 1975									
13...	19.2	140	62	12	.3	310	7.4	.5	0
JUNE									
13...	.13	850	380	32	2.8	2110	8.1	18.5	240

05059700 - MAPLE RIVER NEAR ENDERLIN, N. DAK. (LAT 46 37 18 LONG 097 34 25)

SEP., 1975									
25...	16.9	700	340	22	1.5	1820	7.0	11.5	160

05060000 - MAPLE RIVER NEAR MAPLETON, N. DAK. (LAT 46 51 40 LONG 097 06 10)

MAY, 1975									
05... 1090		400	240	21	1.1	1010	7.8	12.0	120
SEP.									
16...	49.9	490	270	29	1.9	1750	8.4	18.0	200

05060500 - RUSH RIVER AT AMENIA, N. DAK. (LAT 47 01 00 LONG 097 12 50)

APR., 1975									
18... 1500		150	56	10	.3	320	7.4	1.0	790

05064500 - RED RIVER OF THE NORTH AT HALSTAD, MINN. (LAT 47 21 10 LONG 096 50 50)

APR., 1975									
23... 16200		170	59	11	.3	380	7.7	7.0	240
SEP.									
19...	810	280	43	16	.6	680	8.1	14.0	0

05065500 - GOOSE RIVER NEAR PORTLAND, N. DAK. (LAT 47 32 20 LONG 097 27 20)

MAR., 1975									
21... 19.2		350	170	11	.5	798	7.9	.0	160
SEP.									
19...	.08	640	270	14	.8	1400	7.1	11.0	40

05066500 - GOOSE RIVER AT HILLSBORO, N. DAK. (LAT 47 24 20 LONG 097 03 40)

APR., 1975									
14... 629		200	75	15	.5	500	7.3	.0	0
SEP.									
19...	6.19	620	280	27	1.9	1700	7.9	14.0	240

05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, N. DAK. (LAT 47 56 34 LONG 097 03 10)

APR., 1975									
24... 30600		180	65	10	.3	380	7.2	6.5	40
SEP.									
24... 1470		190	17	10	.3	340	8.5	13.0	0

05083600 - MIDDLE BRANCH FOREST RIVER NEAR WHITMAN, N. DAK. (LAT 48 14 50 LONG 098 07 00)

APR., 1975									
16... 16.9		170	77	24	.8	430	8.1	.0	240
JULY									
18...	4.79	260	0	25	1.1	657	7.9	27.0	40

05089000 - SOUTH BRANCH PARK RIVER BELOW HOMME DAM, N. DAK. (LAT 48 24 07 LONG 097 46 55)

APR., 1975									
23... 224		160	58	25	.9	424	7.5	--	40
SEP.									
04...	2.30	240	78	24	1.0	600	8.2	18.0	200

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05089100 - MIDDLE BRANCH PARK RIVER NEAR UNION, N. DAK. (LAT 48 32 32 LONG 098 01 10)

APR., 1975										
14...	1800	24	3.6	400	190	16	5.6	18	5.0	60
SEP.										
05...	1145	.05	16	150	340	57	24	51	5.5	306

05089500 - CART CREEK AT MOUNTAIN, N. DAK. (LAT 48 40 37 LONG 097 51 41)

APR., 1975										
14...	1615	21	4.6	490	120	34	8.5	22	4.2	81

05090000 - PARK RIVER AT GRAFTON, N. DAK. (LAT 48 25 24 LONG 097 24 30)

APR., 1975										
18...	1215	848	4.3	170	300	53	17	25	6.6	131
SEP.										
02...	1515	.32	12	20	250	93	48	110	7.7	317

05092000 - RED RIVER OF THE NORTH AT DRAYTON, N. DAK. (LAT 48 34 20 LONG 097 08 50)

APR., 1975										
23...	1215	30670	4.9	230	40	40	15	8.7	4.9	135
SEP.										
02...	1210	2400	8.3	130	10	53	26	24	4.7	239

05092200 - PEMBINA COUNTY DRAIN 20 NEAR GLASSTON, N. DAK. (LAT 48 41 49 LONG 097 23 03)

APR., 1975										
18...	1415	19	3.0	110	70	55	37	7.1	6.0	117

05098700 - HIDDEN ISLAND COULEE NEAR HANSBRO, N. DAK. (LAT 48 57 10 LONG 099 25 35)

APR., 1975										
15...	1530	137	3.5	290	140	39	20	14	6.9	77

05098800 - CYPRESS CREEK NEAR SARLES, N. DAK. (LAT 48 56 35 LONG 098 57 05)

APR., 1975										
15...	1750	84	4.9	250	160	42	16	21	6.8	110
JUNE										
10...	1555	.13	18	80	20	110	47	75	7.4	407

05100000 - PEMBINA RIVER AT NECHE, N. DAK. (LAT 48 59 20 LONG 097 33 05)

APR., 1975										
22...	1700	210	5.1	20	110	52	17	29	5.2	151
SEP.										
11...	0950	55	16	40	140	98	33	45	6.2	318

05100500 - HERZOG CREEK NEAR CONCRETE, N. DAK. (LAT 48 45 13 LONG 097 54 22)

APR., 1975										
22...	1435	3.0	4.3	190	1200	45	16	25	5.8	134

05116500 - DES LACS RIVER AT FOXHOLM, N. DAK. (LAT 48 22 14 LONG 101 34 11)

APR., 1975										
22...	1400	1280	3.2	680	100	34	16	21	9.0	103
AUG.										
07...	1000	59	10	190	10	64	46	120	14	372

05117500 - SOURIS RIVER ABOVE MINOT, N. DAK. (LAT 48 14 45 LONG 101 22 15)

APR., 1975										
22...	0930	1870	3.7	230	200	38	21	35	10	139
AUG.										
07...	1130	62	9.6	170	200	68	41	120	13	376

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	CAR- BONATE (CO3) (MG/L)	ALKA- LINITY AS CACO3 (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO. PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
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PART 5. HUDSON BAY BASIN
RED RIVER OF THE NORTH BASIN

05089100 - MIDDLE BRANCH PARK RIVER NEAR UNION, N. DAK. (LAT 48 32 32 LONG 098 01 10)

APR., 1975									
14...	0	49	41	7.0	.1	2.9	.36	160	.22
SEP.									
05...	0	251	76	9.3	.1	.45	--	409	.56

05089500 - CART CREEK AT MOUNTAIN, N. DAK. (LAT 48 40 37 LONG 097 51 41)

APR., 1975									
14...	0	66	80	9.3	.2	3.2	.28	264	.36

05090000 - PARK RIVER AT GRAFTON, N. DAK. (LAT 48 25 24 LONG 097 24 30)

APR., 1975									
18...	0	107	120	20	.2	2.9	.25	354	.48
SEP.									
02...	0	260	240	130	.2	.79	--	867	1.18

05092000 - RED RIVER OF THE NORTH AT DRAYTON, N. DAK. (LAT 48 34 20 LONG 097 08 50)

APR., 1975									
23...	0	111	48	8.6	.1	3.6	.17	262	.36
SEP.									
02...	0	196	54	30	.4	.59	--	335	.46

05092200 - PEMBINA COUNTY DRAIN 20 NEAR GLASSTON, N. DAK. (LAT 48 41 49 LONG 097 23 03)

APR., 1975									
18...	0	96	130	5.1	.2	23	.22	348	.47

05098700 - HIDDEN ISLAND COULEE NEAR HANSBORD, N. DAK. (LAT 48 57 10 LONG 099 25 35)

APR., 1975									
15...	0	63	130	11	.1	2.7	.39	293	.40

05098800 - CYPRESS CREEK NEAR SARLES, N. DAK. (LAT 48 56 35 LONG 098 57 05)

APR., 1975									
15...	0	90	110	16	.1	3.2	.39	301	.41
JUNE									
10...	0	334	270	25	.1	.23	--	788	1.07

05100000 - PEMBINA RIVER AT NECHE, N. DAK. (LAT 48 59 20 LONG 097 33 05)

APR., 1975									
22...	0	124	130	9.7	.1	1.7	.17	372	.51
SEP.									
11...	0	261	210	14	.1	.20	--	610	.83

05100500 - HERZOG CREEK NEAR CONCRETE, N. DAK. (LAT 48 45 13 LONG 097 54 22)

APR., 1975									
22...	0	110	110	9.9	.2	3.4	.30	331	.45

05116500 - DES LACS RIVER AT FOXHOLM, N. DAK. (LAT 48 22 14 LONG 101 34 11)

APR., 1975									
22...	0	85	110	12	.1	3.4	.13	337	.46
AUG.									
07...	0	305	300	12	.0	1.0	--	796	1.08

05117500 - SOURIS RIVER ABOVE MINOT, N. DAK. (LAT 48 14 45 LONG 101 22 15)

APR., 1975									
22...	0	114	130	20	.1	2.7	.12	348	.47
AUG.									
07...	0	308	280	25	.1	1.0	--	770	1.05

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

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DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (8) (UG/L)
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PART 5. HUDSON BAY BASIN
RED RIVER OF THE NORTH BASIN

05089100 - MIDDLE BRANCH PARK RIVER NEAR UNION, N. DAK. (LAT 48 32 32 LONG 098 01 10)

APR., 1975									
14...	10.4	63	14	36	1.0	244	7.6	.0	240
SEP.									
05...	.06	240	0	31	1.4	480	7.9	12.0	40

05089500 - CART CREEK AT MOUNTAIN, N. DAK. (LAT 48 40 37 LONG 097 51 41)

APR., 1975									
14...	15.0	120	53	28	.9	345	7.9	.0	240

05090000 - PARK RIVER AT GRAFTON, N. DAK. (LAT 48 25 24 LONG 097 24 30)

APR., 1975									
18...	811	200	95	21	.8	480	8.0	.0	200
SEP.									
02...	.75	430	170	35	2.3	1260	8.1	16.5	40

05092000 - RED RIVER OF THE NORTH AT DRAYTON, N. DAK. (LAT 48 34 20 LONG 097 08 50)

APR., 1975									
23...	21700	160	51	10	.3	330	8.2	2.5	0
SEP.									
02...	2170	240	43	18	.7	540	8.2	19.0	120

05092200 - PEMBINA COUNTY DRAIN 20 NEAR GLASSTON, N. DAK. (LAT 48 41 49 LONG 097 23 03)

APR., 1975									
18...	17.9	290	190	5	.2	500	7.7	.0	200

05098700 - HIDDEN ISLAND COULEE NEAR HANSBORD, N. DAK. (LAT 48 57 10 LONG 099 25 35)

APR., 1975									
15...	108	180	120	14	.5	440	7.3	2.0	0

05098800 - CYPRESS CREEK NEAR SARLES, N. DAK. (LAT 48 56 35 LONG 098 57 05)

APR., 1975									
15...	68.3	170	80	20	.7	455	7.3	3.0	0
JUNE									
10...	.28	470	130	25	1.5	1250	7.8	16.5	280

05100000 - PEMBINA RIVER AT NECHE, N. DAK. (LAT 48 59 20 LONG 097 33 05)

APR., 1975									
22...	211	200	76	23	.9	525	8.3	.0	0
SEP.									
11...	90.6	380	120	20	1.0	860	--	14.0	80

05100500 - HERZOG CREEK NEAR CONCRETE, N. DAK. (LAT 48 45 13 LONG 097 54 22)

APR., 1975									
22...	2.68	180	68	23	.8	441	7.8	1.0	0

05116500 - DES LACS RIVER AT FOXHOLM, N. DAK. (LAT 48 22 14 LONG 101 34 11)

APR., 1975									
22...	1170	150	66	22	.7	405	7.8	2.0	0
AUG.									
07...	127	350	44	42	2.8	1110	8.4	22.0	480

05117500 - SOURIS RIVER ABOVE MINOT, N. DAK. (LAT 48 14 45 LONG 101 22 15)

APR., 1975									
22...	1760	180	67	28	1.1	520	7.6	2.0	0
AUG.									
07...	129	340	30	42	2.8	1120	8.1	22.0	280

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05120200 - WINTERING RIVER NEAR BERGEN, N. DAK. (LAT 47 55 50 LONG 100 40 15)										
MAY , 1975 14...	1000	27	2.4	400	220	33	26	150	9.3	366
05122000 - SOURIS RIVER NEAR BANTRY, N. DAK. (LAT 48 30 20 LONG 100 26 04)										
JUNE, 1975 03...	1530	4250	1.8	20	80	44	22	48	10	201
AUG. 06...	1715	360	6.1	130	10	57	33	85	9.2	326
05123100 - OAK CREEK AT LAKE METIGOSHE OUTLET NR BOTTINEAU, N. DAK. (LAT 48 57 56 LONG 100 21 47)										
MAY , 1975 08...	1530	131	5.6	210	60	26	35	4.4	9.5	235
AUG. 06...	1130	13	8.7	130	20	32	36	4.1	9.1	253
05123510 - DEEP RIVER NEAR UPHAM, N. DAK. (LAT 48 35 03 LONG 100 51 44)										
MAY , 1975 07...	1330	550	6.7	250	20	42	28	20	12	167
AUG. 13...	1100	2.0	2.7	440	20	60	66	60	12	414
05123700 - CUT BANK CREEK AT NORTH LAKE OUTLET NR GRANVILLE, N. DAK. (LAT 48 23 10 LONG 100 46 00)										
APR., 1975 29...	1530	190	12	40	40	40	50	97	15	280
AUG. 14...	1100	6.2	24	80	10	32	52	120	25	330
05123750 - CUTBANK CREEK AT UPHAM, N. DAK. (LAT 48 34 29 LONG 100 44 39)										
MAY , 1975 23...	1300	117	8.1	400	40	45	53	73	14	306
AUG. 13...	1200	9.0	13	370	100	59	61	110	17	450
05123900 - BOUNDARY CREEK NEAR LANDA, N. DAK. (LAT 48 48 46 LONG 100 51 46)										
APR., 1975 15...	2120	1360	3.2	250	140	26	11	26	7.4	92
PART 6. MISSOURI RIVER BASIN										
YELLOWSTONE RIVER BASIN										
06329597 - CHARBONNEAU CREEK NEAR CHARBONNEAU, N. DAK. (LAT 47 51 10 LONG 103 47 40)										
APR., 1975 14...	1345	91	1.5	1500	80	15	6.0	68	6.2	135
LITTLE MUDDY CREEK BASIN										
06331000 - LITTLE MUDDY RIVER BELOW COW CREEK NR WILLISTON, N. DAK. (LAT 48 17 04 LONG 103 34 21)										
APR., 1975 21...	0920	1480	3.2	340	60	21	11	22	8.2	111
WHITE EARTH RIVER BASIN										
06332000 - WHITE EARTH RIVER AT WHITE EARTH, N. DAK. (LAT 48 22 35 LONG 102 46 00)										
APR., 1975 17...	0950	739	3.6	290	130	23	20	44	8.2	145

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

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DATE	CAR- BONATE (CO3) (MG/L)	ALKA- LINITY AS CACO3 (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05120200 - WINTERING RIVER NEAR BERGEN, N. DAK. (LAT 47 55 50 LONG 100 40 15)

MAY , 1975 14...	0	300	210	12	.1	.45	.23	699	.95
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05122000 - SOURIS RIVER NEAR BANTRY, N. DAK. (LAT 48 30 20 LONG 100 26 04)

JUNE, 1975 03...	0	165	130	12	.1	.23	--	373	.51
AUG. 06...	0	267	190	17	.0	.45	--	581	.79

05123100 - OAK CREEK AT LAKE METIGOSHE OUTLET NR BOTTINEAU, N. DAK. (LAT 48 57 56 LONG 100 21 47)

MAY , 1975 08...	0	193	29	3.7	.1	.56	.01	253	.34
AUG. 06...	0	208	33	5.3	.0	.56	--	277	.38

05123510 - DEEP RIVER NEAR UPHAM, N. DAK. (LAT 48 35 03 LONG 100 51 44)

MAY , 1975 07...	0	137	98	22	.0	.86	.05	361	.49
AUG. 13...	0	340	120	69	.0	.90	--	632	.86

05123700 - CUT BANK CREEK AT NORTH LAKE OUTLET NR GRANVILLE, N. DAK. (LAT 48 23 10 LONG 100 46 00)

APR., 1975 29...	0	230	240	31	.1	--	--	668	.91
AUG. 14...	0	271	250	37	.1	--	--	756	1.03

05123750 - CUTBANK CREEK AT UPHAM, N. DAK. (LAT 48 34 29 LONG 100 44 39)

MAY , 1975 23...	0	251	200	28	.1	.23	.07	610	.83
AUG. 13...	0	369	240	33	.1	.32	--	788	1.07

05123900 - BOUNDARY CREEK NEAR LANDA, N. DAK. (LAT 48 48 46 LONG 100 51 46)

APR., 1975 15...	0	75	82	6.4	.1	2.1	.26	236	.32
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PART 6. MISSOURI RIVER BASIN

YELLOWSTONE RIVER BASIN

06329597 - CHARBONNEAU CREEK NEAR CHARBONNEAU, N. DAK. (LAT 47 51 10 LONG 103 47 40)

APR., 1975 14...	0	111	98	1.7	.1	.63	.07	325	.44
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LITTLE MUDDY CREEK BASIN

06331000 - LITTLE MUDDY RIVER BELOW COW CREEK NR WILLISTON, N. DAK. (LAT 48 17 04 LONG 103 34 21)

APR., 1975 21...	0	91	56	1.6	.1	1.3	.09	192	.26
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WHITE EARTH RIVER BASIN

06332000 - WHITE EARTH RIVER AT WHITE EARTH, N. DAK. (LAT 48 22 35 LONG 102 46 00)

APR., 1975 17...	0	119	88	27	.1	1.4	.18	321	.44
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CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05120200 - WINTERING RIVER NEAR BERGEN, N. DAK. (LAT 47 55 50 LONG 100 40 15)

MAY, 1975									
14...	51.0	190	0	62	4.7	950	7.6	13.0	590

05122000 - SOURIS RIVER NEAR BANTRY, N. DAK. (LAT 48 30 20 LONG 100 26 04)

JUNE, 1975									
03...	4280	200	36	33	1.5	590	7.7	18.0	0
AUG.									
06...	565	280	11	39	2.2	900	7.9	23.0	200

05123100 - OAK CREEK AT LAKE METIGOSHE OUTLET NR BOTTINEAU, N. DAK. (LAT 48 57 56 LONG 100 21 47)

MAY, 1975									
08...	89.5	210	16	4	.1	410	7.7	7.0	40
AUG.									
06...	9.72	230	21	4	.1	435	8.5	21.0	0

05123510 - DEEP RIVER NEAR UPHAM, N. DAK. (LAT 48 35 03 LONG 100 51 44)

MAY, 1975									
07...	536	220	83	16	.6	530	7.9	11.0	40
AUG.									
13...	3.57	420	82	23	1.3	850	--	21.0	160

05123700 - CUT BANK CREEK AT NORTH LAKE OUTLET NR GRANVILLE, N. DAK. (LAT 48 23 10 LONG 100 46 00)

APR., 1975									
29...	343	310	76	39	2.4	990	8.4	5.0	120
AUG.									
14...	12.8	290	24	44	3.0	1000	9.3	21.5	180

05123750 - CUTBANK CREEK AT UPHAM, N. DAK. (LAT 48 34 29 LONG 100 44 39)

MAY, 1975									
23...	193	330	80	31	1.7	870	7.8	11.5	470
AUG.									
13...	19.1	400	29	36	2.4	1150	--	21.0	160

05123900 - BOUNDARY CREEK NEAR LANDA, N. DAK. (LAT 48 48 46 LONG 100 51 46)

APR., 1975									
15...	867	110	35	32	1.1	350	7.6	.0	120

PART 6. MISSOURI RIVER BASIN

YELLOWSTONE RIVER BASIN

06329597 - CHARBONNEAU CREEK NEAR CHARBONNEAU, N. DAK. (LAT 47 51 10 LONG 103 47 40)

APR., 1975									
14...	79.9	62	0	68	3.8	429	8.4	4.0	40

LITTLE MUDDY CREEK BASIN

06331000 - LITTLE MUDDY RIVER BELOW COW CREEK NR WILLISTON, N. DAK. (LAT 48 17 04 LONG 103 34 21)

APR., 1975									
21...	768	98	7	31	1.0	300	8.3	2.0	80

WHITE EARTH RIVER BASIN

06332000 - WHITE EARTH RIVER AT WHITE EARTH, N. DAK. (LAT 48 22 35 LONG 102 46 00)

APR., 1975									
17...	641	140	21	39	1.6	420	8.3	.5	0

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
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PART 6. MISSOURI RIVER BASIN

SHELL CREEK BASIN

06332520 - SHELL CREEK NEAR PARSHALL, N. DAK. (LAT 48 03 11 LONG 102 08 10)

APR., 1975										
16...	1330	338	3.4	400	50	18	9.2	44	6.6	114
SEP.										
29...	1440	10	11	350	80	43	49	480	11	777

LITTLE MISSOURI RIVER BASIN

06335500 - LITTLE MISSOURI RIVER AT MARMARTH, N. DAK. (LAT 46 17 44 LONG 103 55 06)

OCT., 1974										
02...	1155	4.6	2.6	80	20	34	47	610	9.2	580
APR., 1975										
15...	1710	1910	2.0	210	20	38	16	91	4.4	118

KNIFE RIVER BASIN

06339100 - KNIFE RIVER AT MANNING, N. DAK. (LAT 47 14 10 LONG 102 46 10)

OCT., 1974										
03...	1615	.10	9.0	360	360	49	26	360	11	670
APR., 1975										
20...	1740	1550	2.3	60	60	13	2.8	18	6.5	66

06339490 - ELM CREEK NEAR GOLDEN VALLEY, N. DAK. (LAT 47 06 25 LONG 102 03 05)

APR., 1975										
21...	1245	352	2.0	250	80	15	6.9	33	6.5	91

06339500 - KNIFE RIVER NEAR GOLDEN VALLEY, N. DAK. (LAT 47 09 40 LONG 102 03 39)

APR., 1975										
21...	1440	3800	2.5	1700	140	21	6.7	29	7.2	100

TURTLE CREEK BASIN

06341400 - TURTLE CREEK NEAR TURTLE LAKE, N. DAK. (LAT 47 27 30 LONG 100 55 15)

APR., 1975										
21...	1130	3.0	4.7	1800	80	28	12	90	6.6	225

SQUARE BUTTE CREEK BASIN

06342100 - SQUARE BUTTE CREEK TRIBUTARY NO 2 NEAR CENTER, N. DAK. (LAT 47 06 40 LONG 101 15 05)

APR., 1975										
16...	1445	1.2	4.0	860	260	28	17	46	17	246
AUG.										
27...	1100	.12	3.9	130	0	28	32	190	6.2	606

06342260 - SQUARE BUTTE CREEK BELOW CENTER, N. DAK. (LAT 47 03 25 LONG 101 11 35)

APR., 1975										
23...	1430	198	1.4	230	0	29	21	82	9.8	209
AUG.										
27...	1550	1.0	12	60	80	50	30	140	4.8	460

BURNT CREEK BASIN

06342450 - BURNT CREEK NEAR BISMARCK, N. DAK. (LAT 46 54 54 LONG 100 48 48)

APR., 1975										
22...	1000	101	2.0	230	60	22	13	18	5.1	114

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	CAR- BONATE (CO3) (MG/L)	ALKA- LINIT AS CACO3 (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
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PART 6. MISSOURI RIVER BASIN

SHELL CREEK BASIN

06332520 - SHELL CREEK NEAR PARSHALL, N. DAK. (LAT 48 03 11 LONG 102 08 10)

APR., 1975									
16...	0	94	84	1.8	.0	1.1	.15	256	.35
SEP.									
29...	0	637	720	17	.3	.77	--	1760	2.39

LITTLE MISSOURI RIVER BASIN

06335500 - LITTLE MISSOURI RIVER AT MARMARTH, N. DAK. (LAT 46 17 44 LONG 103 55 06)

OCT., 1974									
02...	7	487	1100	18	.7	.23	.01	2060	2.80
APR., 1975									
15...	0	97	250	5.6	.2	.56	.03	482	.66

KNIFE RIVER BASIN

06339100 - KNIFE RIVER AT MANNING, N. DAK. (LAT 47 14 10 LONG 102 46 10)

OCT., 1974									
03...	0	550	450	3.9	.9	.23	.13	1260	1.71
APR., 1975									
20...	0	54	29	2.0	.1	1.6	.13	152	.21

06339490 - ELM CREEK NEAR GOLDEN VALLEY, N. DAK. (LAT 47 06 25 LONG 102 03 05)

APR., 1975									
21...	0	75	63	2.8	.1	1.2	.10	215	.29

06339500 - KNIFE RIVER NEAR GOLDEN VALLEY, N. DAK. (LAT 47 09 40 LONG 102 03 39)

APR., 1975									
21...	0	82	63	1.5	.1	2.1	.10	215	.29

TURTLE CREEK BASIN

06341400 - TURTLE CREEK NEAR TURTLE LAKE, N. DAK. (LAT 47 27 30 LONG 100 55 15)

APR., 1975									
21...	0	185	120	5.9	.1	.34	.27	466	.63

SQUARE BUTTE CREEK BASIN

06342100 - SQUARE BUTTE CREEK TRIBUTARY NO 2 NEAR CENTER, N. DAK. (LAT 47 06 40 LONG 101 15 05)

APR., 1975									
16...	0	202	56	5.7	.1	.23	.27	318	.43
AUG.									
27...	0	497	120	3.1	.1	.52	--	681	.93

06342260 - SQUARE BUTTE CREEK BELOW CENTER, N. DAK. (LAT 47 03 25 LONG 101 11 35)

APR., 1975									
23...	0	171	170	7.5	.1	.75	.04	437	.59
AUG.									
27...	0	377	160	6.5	.2	.09	--	638	.87

BURNT CREEK BASIN

06342450 - BURNT CREEK NEAR BISMARCK, N. DAK. (LAT 46 54 54 LONG 100 48 48)

APR., 1975									
22...	0	94	49	1.8	.1	.68	.07	212	.29

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
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PART 6. MISSOURI RIVER BASIN

SHELL CREEK BASIN

06332520 - SHELL CREEK NEAR PARSHALL, N. DAK. (LAT 48 03 11 LONG 102 08 10)

APR., 1975									
16...	234	83	0	51	2.1	350	8.3	.5	0
SEP.									
29...	47.5	310	0	76	12	2550	8.4	11.5	400

LITTLE MISSOURI RIVER BASIN

06335500 - LITTLE MISSOURI RIVER AT MARMARTH, N. DAK. (LAT 46 17 44 LONG 103 55 06)

OCT., 1974									
02...	25.6	280	0	82	16	3160	8.3	11.0	710
APR., 1975									
15...	2490	160	64	54	3.1	680	8.1	2.5	940

KNIFE RIVER BASIN

06339100 - KNIFE RIVER AT MANNING, N. DAK. (LAT 47 14 10 LONG 102 46 10)

OCT., 1974									
03...	.34	230	0	76	10	1900	7.5	11.0	470
APR., 1975									
20...	637	44	0	43	1.2	210	7.1	.5	1100

06339490 - ELM CREEK NEAR GOLDEN VALLEY, N. DAK. (LAT 47 06 25 LONG 102 03 05)

APR., 1975									
21...	204	66	0	49	1.8	290	7.3	3.5	1300

06339500 - KNIFE RIVER NEAR GOLDEN VALLEY, N. DAK. (LAT 47 09 40 LONG 102 03 39)

APR., 1975									
21...	2210	80	0	41	1.4	300	7.3	3.0	1500

TURTLE CREEK BASIN

06341400 - TURTLE CREEK NEAR TURTLE LAKE, N. DAK. (LAT 47 27 30 LONG 100 55 15)

APR., 1975									
21...	3.85	120	0	61	3.6	600	7.8	5.0	80

SQUARE BUTTE CREEK BASIN

06342100 - SQUARE BUTTE CREEK TRIBUTARY NO. 2 NEAR CENTER, N. DAK. (LAT 47 06 40 LONG 101 15 05)

APR., 1975									
16...	1.03	140	0	38	1.7	460	7.7	.0	200
AUG.									
27...	.22	200	0	66	5.8	1040	--	17.0	240

06342260 - SQUARE BUTTE CREEK BELOW CENTER, N. DAK. (LAT 47 03 25 LONG 101 11 35)

APR., 1975									
23...	234	160	0	51	2.8	675	7.8	3.0	790
AUG.									
27...	1.81	250	0	55	3.9	1000	--	20.0	200

BURNT CREEK BASIN

06342450 - BURNT CREEK NEAR BISMARCK, N. DAK. (LAT 46 54 54 LONG 100 48 48)

APR., 1975									
22...	57.9	110	15	25	.8	280	7.6	1.0	0

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)
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PART 6. MISSOURI RIVER BASIN

HEART RIVER BASIN

06344600 - GREEN RIVER NEAR NEW HRADEC, N. DAK. (LAT 47 01 40 LONG 103 03 10)

OCT., 1974										
17...	1455	.52	3.3	20	20	44	36	160	5.0	420
MAR., 1975										
21...	1505	8.2	5.3	110	100	23	18	67	3.7	229
APR.										
23...	1535	429	2.1	510	140	12	4.6	23	5.2	66

06345500 - HEART RIVER NEAR RICHARDTON, N. DAK. (LAT 46 44 46 LONG 102 18 27)

MAR., 1975										
21...	1150	5.4	4.3	80	80	64	36	160	6.8	299
APR.										
21...	1930	6700	1.7	230	160	34	13	43	7.2	132

06347000 - ANTELOPE CREEK NEAR CARSON, N. DAK. (LAT 46 31 50 LONG 101 38 25)

MAR., 1975										
19...	1000	9.3	3.6	230	60	38	23	35	6.4	211
APR.										
23...	1345	225	2.4	2600	120	35	18	34	6.4	122
AUG.										
26...	1230	18	5.4	80	20	58	40	77	10	235

06348000 - HEART RIVER NEAR LARK, N. DAK. (LAT 46 36 37 LONG 101 22 54)

APR., 1975										
04...	1100	36	3.0	80	60	63	35	160	6.6	440
22...	1430	3920	2.1	150	60	43	18	64	6.6	172
AUG.										
26...	1230	91	5.0	150	10	64	44	110	9.1	336

06348500 - SWEETBRIAR CREEK NEAR JUDSON, N. DAK. (LAT 46 51 06 LONG 101 15 10)

APR., 1975										
22...	1715	517	2.1	700	50	13	6.0	25	5.5	79
AUG.										
26...	1550	.28	5.2	100	20	14	38	260	6.1	410

CANNONBALL RIVER BASIN

06350000 - CANNONBALL RIVER AT REGENT, N. DAK. (LAT 46 25 36 LONG 102 33 05)

APR., 1975										
21...	2030	2220	1.9	80	160	38	18	58	8.0	117

06351000 - CANNONBALL RIVER BELOW BENTLEY, N. DAK. (LAT 46 21 30 LONG 102 02 30)

OCT., 1974										
07...	1305	3.8	4.2	60	20	120	39	320	7.8	460
MAR., 1975										
20...	1715	35	2.9	20	80	57	43	150	6.4	325
APR.										
22...	1215	3180	2.5	150	160	48	19	55	9.3	131

06351680 - WHITE BUTTE FORK CEDAR CREEK NEAR SCRANTON, N. DAK. (LAT 46 19 20 LONG 102 59 45)

APR., 1975										
19...	1355	8.0	3.9	320	400	58	38	140	8.8	113

06352000 - CEDAR CREEK NEAR HAYNES, N. DAK. (LAT 46 09 15 LONG 102 28 25)

OCT., 1974										
07...	1745	1.2	3.0	0	40	54	74	360	8.7	560
MAR., 1975										
20...	1225	14	2.8	100	80	57	53	200	5.7	356
APR.										
22...	2015	1250	2.2	150	240	66	47	150	9.5	155

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	CAR- BONATE (CO ₃) (MG/L)	ALKA- LITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
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PART 6. MISSOURI RIVER BASIN

HEART RIVER BASIN

06344600 - GREEN RIVER NEAR NEW HRADEC, N. DAK. (LAT 47 01 40 LONG 103 03 10)

OCT., 1974 17...	0	345	260	4.7	.6	.23	.01	702	.95
MAR., 1975 21...	0	188	83	3.8	.3	.56	.03	325	.44
APR. 23...	0	54	37	1.8	.1	1.2	.08	130	.18

06345500 - HEART RIVER NEAR RICHARDTON, N. DAK. (LAT 46 44 46 LONG 102 18 27)

MAR., 1975 21...	0	245	400	9.8	.3	.56	.04	854	1.16
APR. 21...	0	108	110	8.7	.1	2.7	.07	298	.41

06347000 - ANTELOPE CREEK NEAR CARSON, N. DAK. (LAT 46 31 50 LONG 101 38 25)

MAR., 1975 19...	0	173	91	4.4	.2	.56	.02	303	.41
APR. 23...	0	100	130	3.1	.1	2.5	.04	321	.44
AUG. 26...	0	193	270	5.3	.1	1.1	--	567	.77

06348000 - HEART RIVER NEAR LARK, N. DAK. (LAT 46 36 37 LONG 101 22 54)

APR., 1975 04...	0	361	290	6.0	.4	.23	.01	772	1.05
22...	0	141	180	3.5	.1	1.7	.03	429	.58
AUG. 26...	0	276	300	6.4	.1	.27	--	716	.97

06348500 - SWEETBRIAR CREEK NEAR JUDSON, N. DAK. (LAT 46 51 06 LONG 101 15 10)

APR., 1975 22...	0	65	39	1.8	.1	1.1	.09	184	.25
AUG. 26...	39	401	350	4.8	.5	.41	--	915	1.24

CANNONBALL RIVER BASIN

06350000 - CANNONBALL RIVER AT REGENT, N. DAK. (LAT 46 25 36 LONG 102 33 05)

APR., 1975 21...	0	96	190	5.2	.1	3.4	.08	419	.57
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06351000 - CANNONBALL RIVER BELOW BENTLEY, N. DAK. (LAT 46 21 30 LONG 102 02 30)

OCT., 1974 07...	0	377	760	9.8	.6	.23	.00	1500	2.04
MAR., 1975 20...	0	267	380	7.9	.4	.56	.02	842	1.15
APR. 22...	0	107	210	3.1	.1	3.8	.05	440	.60

06351680 - WHITE BUTTE FORK CEDAR CREEK NEAR SCRANTON, N. DAK. (LAT 46 19 20 LONG 102 59 45)

APR., 1975 19...	0	93	500	6.4	.1	3.6	.39	836	1.14
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06352000 - CEDAR CREEK NEAR HAYNES, N. DAK. (LAT 46 09 15 LONG 102 28 25)

OCT., 1974 07...	0	459	740	11	.7	.23	.00	1530	2.08
MAR., 1975 20...	0	292	480	7.2	.4	.56	.02	1040	1.42
APR. 22...	0	127	530	6.4	.1	3.2	.05	939	1.28

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
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PART 6. MISSOURI RIVER BASIN

HEART RIVER BASIN

06344600 - GREEN RIVER NEAR NEW HRADEC, N. DAK. (LAT 47 01 40 LONG 103 03 10)

OCT., 1974									
17...	.99	260	0	57	4.3	1200	8.2	8.0	430
MAR., 1975									
21...	7.20	130	0	52	2.5	525	8.3	.0	200
APR.									
23...	151	49	0	47	1.4	209	7.7	5.5	1700

06345500 - HEART RIVER NEAR RICHARDTON, N. DAK. (LAT 46 44 46 LONG 102 18 27)

MAR., 1975									
21...	12.5	310	63	52	4.0	1260	8.2	.0	590
APR.									
21...	5390	140	30	39	1.6	455	7.5	3.0	1700

06347000 - ANTELOPE CREEK NEAR CARSON, N. DAK. (LAT 46 31 50 LONG 101 38 25)

MAR., 1975									
19...	7.61	190	16	28	1.1	550	7.4	.0	120
APR.									
23...	195	160	61	30	1.2	440	7.9	2.0	40
AUG.									
26...	28.9	310	120	34	1.9	900	--	17.0	280

06348000 - HEART RIVER NEAR LARK, N. DAK. (LAT 46 36 37 LONG 101 22 54)

APR., 1975									
04...	75.0	300	0	53	4.0	1200	7.8	.0	390
22...	4540	180	40	42	2.1	646	8.3	2.5	80
AUG.									
26...	176	340	65	40	2.6	1050	--	20.0	160

06348500 - SWEETBRIAR CREEK NEAR JUDSON, N. DAK. (LAT 46 51 06 LONG 101 15 10)

APR., 1975									
22...	257	57	0	46	1.4	225	8.1	2.0	0
AUG.									
26...	.69	190	0	74	8.2	1450	--	20.0	400

CANNONBALL RIVER BASIN

06350000 - CANNONBALL RIVER AT REGENT, N. DAK. (LAT 46 25 36 LONG 102 33 05)

APR., 1975									
21...	2510	170	73	41	1.9	600	8.2	.5	1300

06351000 - CANNONBALL RIVER BELOW BENTLEY, N. DAK. (LAT 46 21 30 LONG 102 02 30)

OCT., 1974									
07...	15.4	460	83	60	6.5	2180	8.0	7.5	710
MAR., 1975									
20...	79.6	320	53	50	3.7	1260	8.2	1.0	430
APR.									
22...	3780	200	91	36	1.7	658	8.0	1.5	940

06351680 - WHITE BUTTE FORK CEDAR CREEK NEAR SCRANTON, N. DAK. (LAT 46 19 20 LONG 102 59 45)

APR., 1975									
19...	18.1	300	210	49	3.5	1200	7.2	.5	550

06352000 - CEDAR CREEK NEAR HAYNES, N. DAK. (LAT 46 09 15 LONG 102 28 25)

OCT., 1974									
07...	4.96	440	0	63	7.5	2400	8.2	9.5	830
MAR., 1975									
20...	39.3	360	68	54	4.6	1460	8.3	.5	590
APR.									
22...	3170	360	230	47	3.4	1300	8.0	1.0	3000

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANENUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
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PART 6. MISSOURI RIVER BASIN

CANNONBALL RIVER BASIN

06352500 - CEDAR CREEK NEAR PRETTY ROCK, N. DAK. (LAT 46 01 55 LONG 101 49 55)

MAR., 1975										
20...	1515	30	3.0	110	80	88	95	280	10	386
APR.										
22...	1740	851	1.7	80	140	51	37	100	9.2	157

06353000 - CEDAR CREEK NEAR RALEIGH, N. DAK. (LAT 46 05 00 LONG 101 20 00)

MAR., 1975										
19...	1200	94	3.2	510	90	24	22	110	6.3	157
APR.										
23...	1700	1120	2.5	190	30	43	25	78	7.6	125

BEAVER CREEK BASIN

06354500 - BEAVER CREEK AT LINTON, N. DAK. (LAT 46 15 27 LONG 100 13 58)

APR., 1975										
21...	1550	498	4.6	320	180	21	10	26	7.8	109
AUG.										
04...	1200	6.7	11	80	240	59	35	98	13	463

GRAND RIVER BASIN

06355000 - NORTH FORK GRAND RIVER AT HALEY, N. DAK. (LAT 45 57 39 LONG 103 07 09)

APR., 1975										
17...	1030	7.3	1.4	60	120	26	45	260	4.2	301

JAMES RIVER BASIN

06467600 - JAMES RIVER NEAR MANFRED, N. DAK. (LAT 47 38 40 LONG 099 49 40)

APR., 1975										
23...	1400	100	4.5	130	50	22	16	18	7.7	134

06467900 - BIG SLOUGH AT HAMBERG, N. DAK. (LAT 47 45 20 LONG 099 30 42)

APR., 1975										
19...	1300	44	7.8	60	40	22	11	16	7.3	114

06468170 - JAMES RIVER NEAR GRACE CITY, N. DAK. (LAT 47 33 29 LONG 098 51 45)

APR., 1975										
23...	1100	597	3.7	230	50	22	18	11	7.0	131
AUG.										
07...	1130	.90	5.4	100	10	40	39	110	12	401

06469400 - PIPESTEM CREEK NR. PINGREE, N. DAK. (LAT 47 10 03 LONG 098 58 07)

APR., 1975										
23...	0900	966	3.7	380	50	23	15	11	7.8	116
AUG.										
06...	1030	4.1	7.8	170	120	61	41	66	8.8	442

06470000 - JAMES RIVER AT JAMESTOWN, N. DAK. (LAT 46 53 22 LONG 098 40 58)

APR., 1975										
22...	1615	187	3.7	480	380	29	14	15	7.8	131
AUG.										
05...	1500	28	5.7	150	220	36	19	26	8.6	200

06470880 - HYATT SLOUGH NEAR LUDDEN, N. DAK. (LAT 45 56 18 LONG 098 09 03)

MAY, 1975										
29...	1030	--	14	70	120	61	32	50	15	319

380 ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	CAR- BONATE (CO3) (MG/L)	ALKA- LINIT AS CACO3 (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
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PART 6. MISSOURI RIVER BASIN

CANNONBALL RIVER BASIN

06352500 - CEDAR CREEK NEAR PRETTY ROCK, N. DAK. (LAT 46 01 55 LONG 101 49 55)

MAR., 1975									
20...	0	317	890	11	.5	.32	.12	1630	2.22
APR.									
22...	0	129	360	7.5	.1	2.5	.04	695	.95

06353000 - CEDAR CREEK NEAR RALEIGH, N. DAK. (LAT 46 05 00 LONG 101 20 00)

MAR., 1975									
19...	0	129	260	4.7	.2	.63	.15	566	.77
APR.									
23...	0	103	260	3.9	.1	2.1	.03	534	.73

BEAVER CREEK BASIN

06354500 - BEAVER CREEK AT LINTON, N. DAK. (LAT 46 15 27 LONG 100 13 58)

APR., 1975									
21...	0	89	61	4.6	.0	1.4	.19	230	.31
AUG.									
04...	0	380	120	12	.1	.90	--	599	.81

GRAND RIVER BASIN

06355000 - NORTH FORK GRAND RIVER AT HALEY, N. DAK. (LAT 45 57 39 LONG 103 07 09)

APR., 1975									
17...	0	247	560	5.2	.4	.50	.02	1070	1.46

JAMES RIVER BASIN

06467600 - JAMES RIVER NEAR MANFRED, N. DAK. (LAT 47 38 40 LONG 099 49 40)

APR., 1975									
23...	0	110	37	10	.1	1.4	.13	207	.28

06467900 - BIG SLOUGH AT HAMBERG, N. DAK. (LAT 47 45 20 LONG 099 30 42)

APR., 1975									
19...	--	94	41	5.1	.1	--	--	187	.25

06468170 - JAMES RIVER NEAR GRACE CITY, N. DAK. (LAT 47 33 29 LONG 098 51 45)

APR., 1975									
23...	0	107	35	9.3	.1	1.0	.15	168	.23
AUG.									
07...	0	329	130	32	.1	1.7	--	583	.79

06469400 - PIPESTEM CREEK NR. PINGREE, N. DAK. (LAT 47 10 03 LONG 098 58 07)

APR., 1975									
23...	0	95	32	9.0	.1	1.1	.23	174	.24
AUG.									
06...	0	363	84	8.5	.1	.45	--	501	.68

06470000 - JAMES RIVER AT JAMESTOWN, N. DAK. (LAT 46 53 22 LONG 098 40 58)

APR., 1975									
22...	0	107	42	13	.1	1.5	.20	197	.27
AUG.									
05...	0	164	57	7.0	.1	.90	--	255	.35

06470880 - HYATT SLOUGH NEAR LUDDEN, N. DAK. (LAT 45 56 18 LONG 098 09 03)

MAY, 1975									
29...	0	262	100	21	.2	--	--	489	.67

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

381

DATE	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
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PART 6. MISSOURI RIVER BASIN

CANNONBALL RIVER BASIN

06352500 - CEDAR CREEK NEAR PRETTY ROCK, N. DAK. (LAT 46 01 55 LONG 101 49 55)

MAR., 1975									
20...	132	610	290	49	4.9	2500	8.1	1.0	590
APR.									
22...	1600	280	150	43	2.6	995	7.9	3.0	1700

06353000 - CEDAR CREEK NEAR RALEIGH, N. DAK. (LAT 46 05 00 LONG 101 20 00)

MAR., 1975									
19...	144	150	22	60	3.9	870	7.0	.5	200
APR.									
23...	1620	210	110	44	2.3	730	7.6	3.5	0

BEAVER CREEK BASIN

06354500 - BEAVER CREEK AT LINTON, N. DAK. (LAT 46 15 27 LONG 100 13 58)

APR., 1975									
21...	309	94	4	35	1.2	320	7.9	.5	80
AUG.									
04...	10.9	290	0	41	2.5	900	8.1	32.0	80

GRAND RIVER BASIN

06355000 - NORTH FORK GRAND RIVER AT HALEY, N. DAK. (LAT 45 57 39 LONG 103 07 09)

APR., 1975									
17...	21.1	250	3	69	7.2	1500	8.2	.5	1600

JAMES RIVER BASIN

06467600 - JAMES RIVER NEAR MANFRED, N. DAK. (LAT 47 38 40 LONG 099 49 40)

APR., 1975									
23...	55.9	120	11	23	.7	307	7.8	6.5	0

06467900 - BIG SLOUGH AT HAMBERG, N. DAK. (LAT 47 45 20 LONG 099 30 42)

APR., 1975									
19...	22.2	100	7	24	.7	260	--	.5	70

06468170 - JAMES RIVER NEAR GRACE CITY, N. DAK. (LAT 47 33 29 LONG 098 51 45)

APR., 1975									
23...	271	130	22	15	.4	280	8.0	4.5	0
AUG.									
07...	1.42	260	0	46	3.0	880	8.3	22.0	160

06469400 - PIPESTEM CREEK NR. PINGREE, N. DAK. (LAT 47 10 03 LONG 098 58 07)

APR., 1975									
23...	454	120	24	16	.4	268	8.0	5.5	0
AUG.									
06...	5.61	320	0	30	1.6	775	8.6	20.0	0

06470000 - JAMES RIVER AT JAMESTOWN, N. DAK. (LAT 46 53 22 LONG 098 40 58)

APR., 1975									
22...	99.5	130	23	19	.6	320	7.8	3.5	0
AUG.									
05...	19.9	170	4	24	.9	600	7.9	24.5	0

06470880 - HYATT SLOUGH NEAR LUDDEN, N. DAK. (LAT 45 56 18 LONG 098 09 03)

MAY, 1975									
29...	--	280	23	26	1.3	580	7.6	18.0	200

To obtain better coverage of the quality of water the Geological Survey during routine visits to stream-gaging stations collects specific conductance data, and periodically samples are collected for chemical analyses of major anions and cations.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN
RED RIVER OF THE NORTH BASIN

05051500 - RED RIVER OF THE NORTH AT WAHPETON, N. DAK. (LAT 46 15 55 LONG 096 35 40)

OCT., 1974				
01...	1220	296	400	8.5
NOV.				
06...	1110	291	420	5.5
DEC.				
03...	1255	208	475	1.0
FEB., 1975				
05...	1640	260	520	.0
MAR.				
18...	1135	354	480	.0
21...	1235	418	470	.0
APR.				
11...	1315	610	440	.0
16...	1640	1540	400	.5
MAY				
15...	0940	1220	550	11.5
JUNE				
17...	1810	925	410	20.0
JULY				
01...	1620	2510	510	24.5
07...	1515	2540	540	27.5
AUG.				
04...	1600	622	410	26.0
SEP.				
23...	1300	334	480	14.0

05051700 - WILD RICE RIVER NEAR CAYUGA, N. DAK. (LAT 46 07 30 LONG 097 21 40)

APR., 1975				
11...	1530	E.15	1200	.0
25...	1345	5.9	850	6.5
MAY				
15...	1235	7.0	950	15.5
JUNE				
17...	1455	.53	1090	21.0
JULY				
02...	1700	229	570	29.0
AUG.				
05...	1535	1.1	760	26.0
SEP.				
23...	1525	.03	1220	15.5

05054000 - RED RIVER OF THE NORTH AT FARGO, N. DAK. (LAT 46 51 40 LONG 096 47 00)

OCT., 1974				
22...	1450	307	399	8.0
NOV.				
20...	1020	360	400	.0
DEC.				
19...	1015	185	585	.0
FEB., 1975				
06...	1100	211	545	.0
27...	1145	282	510	.0
MAR.				
20...	1520	370	440	.0
APR.				
19...	1155	8260	520	.5
21...	1420	7780	380	2.0
24...	1620	4930	430	4.0
MAY				
01...	1450	3160	454	6.5
14...	1140	1320	700	14.5
22...	1145	1280	480	18.0
JUNE				
24...	1610	4510	480	24.5
30...	1130	8320	280	22.0
JULY				
03...	1400	12500	--	23.0
04...	0915	13100	230	24.5
07...	2010	11400	330	27.0
09...	1830	9130	395	26.0
14...	1650	4210	580	23.5
21...	1420	1690	640	26.5
AUG.				
06...	1345	788	540	23.5
27...	1100	734	454	20.0

E - Estimated.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN
RED RIVER OF THE NORTH BASIN

05054500 - SHEYENNE RIVER ABOVE HARVEY, N. DAK. (LAT 47 42 10 LONG 099 56 55)

OCT., 1974				
01...	1215	.66	1500	3.5
NOV.				
18...	1155	1.6	1500	.5
DEC.				
26...	1305	.79	1450	.0
MAR., 1975				
16...	1535	10	580	3.0
19...	1330	35	430	.0
APR.				
15...	1210	107	210	1.5
17...	1155	139	50	.5
23...	1600	60	640	7.0
MAY				
13...	1440	56	1180	17.0
27...	1210	34	750	14.5
JULY				
11...	1120	31	1150	21.0
AUG.				
07...	1510	1.4	1450	24.5
07...	1515	1.4	1450	24.5
SEP.				
05...	1140	1.0	1480	13.0
30...	1240	1.2	1500	7.5

05055520 - BIG COULEE NR FT. TOTTEN, N. DAK. (LAT 47 52 57 LONG 098 58 02)

OCT., 1974				
23...	1305	.53	620	6.0
NOV.				
20...	1005	.72	625	.5
JAN., 1975				
06...	1550	.52	600	.0
27...	1430	.42	580	.0
MAR.				
20...	1730	12	--	.0
APR.				
13...	1615	43	190	1.0
19...	1810	17	360	2.0
MAY				
09...	1105	7.1	600	8.5
JUNE				
06...	1145	2.2	700	13.5
JULY				
17...	1715	.31	600	25.0
AUG.				
14...	1125	.25	630	16.0
SEP.				
12...	1030	.32	700	8.5

05056100 - MAUVAIS COULEE NEAR CANDU, N. DAK. (LAT 48 26 53 LONG 099 06 08)

APR., 1975				
15...	1210	101	380	1.5
20...	1040	358	510	2.5
MAY				
09...	1630	172	840	16.0
JUNE				
11...	1440	8.0	1050	17.5
JULY				
18...	0915	2.2	1100	24.0
AUG.				
13...	1520	.08	1110	24.0
SEP.				
12...	0910	.10	1100	10.0

05056200 - EDMORE COULEE NEAR EDMORE, N. DAK. (LAT 48 20 14 LONG 098 39 33)

APR., 1975				
15...	1000	196	400	1.0
20...	1305	145	460	6.5
MAY				
09...	1845	31	800	17.5
JUNE				
12...	1310	.48	1000	20.0
JULY				
18...	1315	3.8	700	25.0
AUG.				
13...	1320	.63	990	21.0
SEP.				
12...	1050	E.04	950	10.0

E - Estimated.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
 SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN
 RED RIVER OF THE NORTH BASIN

05057200 - BALDHILL CREEK NEAR DAZEY, N. DAK (LAT 47 13 45 LONG 098 07 28)

OCT., 1974				
03...	1120	1.4	960	6.5
31...	1420	3.2	890	9.0
DEC.				
05...	1300	2.7	1390	.0
JAN., 1975				
07...	1300	3.2	1200	.0
29...	1615	.62	1380	.0
MAR.				
04...	1445	1.8	1000	.0
20...	1225	9.0	500	.0
APR.				
03...	1245	4.2	910	.0
17...	1520	655	290	1.0
MAY				
07...	0915	50	800	11.0
JUNE				
05...	1630	14	1120	19.0
30...	1330	60	860	19.5
AUG.				
07...	1535	2.5	950	22.5
SEP.				
04...	1225	3.4	900	15.0

05058000 - SHEYENNE RIVER BELOW BALDHILL DAM, N. DAK. (LAT 47 01 50 LONG 098 05 50)

OCT., 1974				
02...	1530	12	700	12.0
31...	1210	11	640	8.5
DEC.				
11...	1625	55	740	1.0
JAN., 1975				
29...	1410	55	840	3.0
MAY				
06...	1735	1180	600	7.5
JULY				
17...	1135	99	530	23.5
AUG.				
07...	1330	111	500	23.5

05058500 - SHEYENNE RIVER AT VALLEY CITY, N. DAK. (LAT 46 54 50 LONG 098 00 30)

OCT., 1974				
02...	1240	12	790	9.5
31...	1050	19	760	9.0
DEC.				
11...	1450	57	650	.5
JAN., 1975				
29...	1250	57	830	.0
MAR.				
19...	1505	72	900	.5
MAY				
06...	0955	1800	610	7.0
JUNE				
12...	1630	138	570	18.5
JULY				
17...	0950	121	540	25.0
AUG.				
07...	1135	109	600	22.5
SEP.				
17...	1135	20	730	17.0

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
 SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05059500 - SHEYENNE RIVER AT WEST FARGO, N. DAK. (LAT 46 53 28 LONG 096 54 24)

OCT., 1974				
01...	1725	28	950	8.0
NOV.				
05...	1355	69	890	3.5
DEC.				
10...	1130	50	710	.0
JAN., 1975				
28...	1545	69	920	.0
MAR.				
17...	1530	93	910	.0
APR.				
17...	1525	655	470	.5
19...	1000	918	580	.0
24...	1355	1850	500	.0
30...	1745	1360	690	6.0
MAY				
14...	1415	1070	680	13.0
JUNE				
16...	1310	211	650	18.0
24...	1340	1480	360	23.0
JULY				
01...	1305	2480	370	21.5
02...	1515	3160	237	22.0
04...	1140	2650	--	23.5
05...	1220	3690	270	19.0
07...	1825	3840	300	27.5
09...	1505	2750	500	23.5
14...	1520	1210	660	21.5
21...	1800	482	790	24.0
AUG.				
07...	0915	251	850	21.0
SEP.				
25...	1845	101	960	11.5

05059600 - MAPLE RIVER NEAR HOPE, N. DAK. (LAT 47 19 30 LONG 097 47 25)

MAR., 1975				
20...	1400	E.10	650	.0
APR.				
13...	1150	31	310	.5
19...	0945	36	560	1.0
MAY				
05...	1850	5.3	1150	15.5
JUNE				
13...	1120	.03	2110	18.5
30...	1710	4.6	1310	21.0

05059700 - MAPLE RIVER NEAR ENDERLIN, N. DAK. (LAT 46 37 18 LONG 097 34 25)

OCT., 1974				
02...	1515	3.0	1850	8.0
NOV.				
07...	1050	2.4	1790	4.0
DEC.				
11...	1210	2.9	1690	4.0
JAN., 1975				
31...	1135	1.8	1650	2.0
MAR.				
18...	1905	13	1400	3.0
APR.				
16...	0950	151	580	.5
MAY				
15...	1855	60	1500	15.5
JUNE				
18...	1200	12	1300	18.0
JULY				
01...	1745	3220	400	24.5
02...	1755	2460	540	26.5
23...	1625	50	1190	22.5
AUG.				
06...	1105	14	--	18.0
SEP.				
25...	1155	5.4	1820	11.5

E - Estimated.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN
RED RIVER OF THE NORTH BASIN

05060000 - MAPLE RIVER NEAR MAPLETON, N. DAK. (LAT 46 51 40 LONG 097 06 10)

OCT., 1974				
02...	0935	.69	1500	4.0
30...	1600	5.6	1580	12.0
DEC.				
11...	1100	4.4	2300	.0
MAR., 1975				
17...	1250	E.10	2620	.0
21...	1615	5.7	450	.0
APR.				
15...	1715	685	320	.0
18...	1715	4760	410	.5
MAY				
05...	1540	586	1010	12.0
22...	1455	124	1450	15.5
JUNE				
16...	1645	36	1210	21.5
24...	1115	751	690	24.5
JULY				
01...	1202	6660	260	--
02...	1215	7730	240	25.0
03...	1115	11600	--	22.0
07...	1325	3760	430	27.5
09...	1245	2930	450	23.5
15...	1710	564	830	25.0
AUG.				
06...	1535	63	1110	23.5
SEP.				
16...	1315	21	1750	18.0

05060500 - RUSH RIVER AT AMENIA, N. DAK. (LAT 47 01 00 LONG 097 12 50)

DEC., 1974				
11...	1215	E.04	2700	.0
APR., 1975				
15...	1515	665	400	.0
18...	1515	2330	320	1.0
20...	1620	390	410	4.0
MAY				
05...	1325	51	950	13.5
22...	1240	126	700	13.5
JUNE				
16...	1840	1.8	1300	24.5
JULY				
01...	1520	336	432	21.0
AUG.				
06...	1650	.18	900	24.5

05064500 - RED RIVER OF THE NORTH AT HALSTAD, MINN. (LAT 47 21 10 LONG 096 50 50)

OCT., 1974				
01...	1330	359	540	7.5
30...	1215	485	700	10.0
JAN., 1975				
09...	1200	354	710	.0
28...	1155	350	710	.0
MAR.				
06...	1210	497	630	.0
APR.				
02...	1340	971	540	.0
19...	1035	24800	280	1.0
23...	1500	24500	380	7.0
MAY				
02...	1155	17300	510	6.5
16...	1215	4090	700	14.5
JUNE				
19...	1530	1680	540	19.5
25...	1250	10800	460	23.5
30...	1510	13400	375	22.0
JULY				
02...	1830	19200	288	22.0
05...	1315	32900	330	25.0
08...	1315	39200	--	25.0
10...	1355	39900	350	23.5
AUG.				
08...	1130	1720	650	23.0
SEP.				
19...	1330	728	680	14.0

E - Estimated.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
 SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN
 RED RIVER OF THE NORTH BASIN

05065500 - GOOSE RIVER NEAR PORTLAND, N. DAK. (LAT 47 32 20 LONG 097 27 20)

OCT., 1974				
04...	1510	.92	1590	7.0
29...	1410	1.3	1700	8.5
NOV.				
18...	1330	1.3	1690	.5
DEC.				
13...	1335	.53	2300	.0
JAN., 1975				
27...	1320	.46	2090	.0
MAR.				
18...	1655	4.0	1700	.0
20...	1550	18	860	.0
21...	1415	14	798	.0
APR.				
12...	1530	80	680	.5
19...	1345	1270	430	--
22...	1430	501	640	3.0
MAY				
05...	1555	275	1120	10.5
JUNE				
13...	1405	15	1400	18.0
JULY				
16...	1305	9.3	1310	24.0
AUG.				
15...	1420	E.04	1410	20.0
SEP.				
19...	1040	.03	1400	11.0

05066500 - GOOSE RIVER AT HILLSBORO, N. DAK. (LAT 47 24 20 LONG 097 03 40)

OCT., 1974				
01...	1210	.78	1500	7.0
29...	1550	1.7	1590	9.5
DEC.				
13...	1120	7.9	2010	.0
JAN., 1975				
27...	1505	6.7	2100	.0
MAR.				
17...	1345	9.7	1820	--
22...	1240	120	1250	.0
APR.				
14...	1625	728	500	.0
17...	1830	2660	380	.5
22...	1235	1990	600	2.5
MAY				
16...	1415	148	1300	15.0
JUNE				
19...	1225	37	1400	18.0
JULY				
16...	1515	47	1320	22.0
AUG.				
08...	1340	3.0	1590	22.5
SEP.				
19...	1350	2.1	1700	14.0

E - Estimated.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN
RED RIVER OF THE NORTH BASIN

05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, N. DAK. (LAT 47 56 34 LONG 097 03 10)

OCT., 1974				
23...	1300	2060	400	7.5
DEC.				
03...	0950	1170	580	.0
17...	1540	1210	530	.0
JAN., 1975				
23...	1135	1360	445	.0
FEB.				
24...	1540	1460	500	.0
MAR.				
25...	1515	2520	500	.0
APR.				
18...	1500	20700	350	1.0
20...	1800	38300	310	1.0
24...	1700	40600	380	6.5
30...	1535	38300	480	6.5
MAY				
07...	1415	23700	370	13.5
13...	1100	11100	580	15.0
JUNE				
24...	1320	11000	415	22.5
JULY				
05...	1640	30000	320	24.5
07...	1500	33300	285	25.0
10...	1435	38700	280	25.0
12...	1125	41400	310	22.0
14...	1445	42800	310	24.0
16...	0900	40300	290	22.0
21...	1200	25200	320	25.5
25...	0950	9360	500	22.5
AUG.				
22...	0935	2510	450	19.0
SEP.				
24...	1500	2230	340	13.0

05083600 - MIDDLE BRANCH FOREST RIVER NEAR WHITMAN, N. DAK. (LAT 48 14 50 LONG 098 07 00)

APR., 1975				
11...	1115	E.50	370	1.0
16...	1310	20	430	.0
18...	1730	24	480	.0
MAY				
09...	1100	1.2	536	14.0
JULY				
18...	1430	4.1	657	27.0

05089000 - SOUTH BRANCH PARK RIVER BELOW HOMME DAM, N. DAK. (LAT 48 24 07 LONG 097 46 55)

OCT., 1974				
16...	1415	2.2	680	9.0
NOV.				
22...	1630	14	760	1.5
DEC.				
14...	1330	8.0	845	.0
FEB., 1975				
10...	1350	3.5	990	.0
MAR.				
20...	1132	6.4	1000	--
APR.				
18...	1745	289	--	.5
23...	1600	300	424	--
MAY				
16...	1255	15	620	11.5
JUNE				
04...	1420	5.7	650	15.0
JULY				
09...	1505	25	520	24.5
AUG.				
21...	1420	1.3	650	18.0
SEP.				
04...	1635	1.8	600	18.0

E - Estimated.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
 SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN
 RED RIVER OF THE NORTH BASIN

05089100 - MIDDLE BRANCH PARK RIVER NEAR UNION, N. DAK. (LAT 48 32 32 LONG 098 01 10)

OCT., 1974				
11...	1355	.09	660	9.0
NOV.				
20...	1300	.04	740	.0
DEC.				
15...	1545	.03	800	.0
MAR., 1975				
18...	1840	.58	480	--
20...	1322	.16	560	.0
APR.				
11...	1445	E.20	450	--
14...	1800	24	244	.0
24...	1445	5.8	308	6.0
MAY				
16...	1115	.69	580	13.5
JUNE				
04...	1240	.15	625	13.5
JULY				
11...	1540	.10	580	22.5
AUG.				
19...	1100	E.06	650	13.5
SEP.				
05...	1145	.05	480	12.0

05089500 - CART CREEK AT MOUNTAIN, N. DAK. (LAT 48 40 37 LONG 097 51 41)

OCT., 1974				
11...	1235	.49	710	8.5
NOV.				
20...	1130	.48	890	.0
DEC.				
15...	1645	.14	895	.0
FEB., 1975				
05...	1630	.06	1090	.0
MAR.				
18...	1640	1.1	790	.0
20...	1435	1.1	900	.0
APR.				
11...	1520	E.75	640	.0
14...	1615	21	345	.0
18...	1535	17	480	.0
24...	1045	16	458	1.0
MAY				
15...	1555	2.1	810	18.0
JUNE				
04...	1115	1.2	900	12.0
JULY				
11...	1430	.09	900	21.0

05090000 - PARK RIVER AT GRAFTON, N. DAK. (LAT 48 25 24 LONG 097 24 30)

OCT., 1974				
16...	1530	E.20	1500	9.0
NOV.				
21...	1155	6.5	1440	1.0
DEC.				
14...	1620	9.6	1280	.0
FEB., 1975				
07...	1610	3.1	1300	.0
MAR.				
14...	1520	2.9	1500	.0
APR.				
18...	1215	848	480	.0
21...	1110	331	505	.0
MAY				
16...	1515	51	1100	16.0
JUNE				
09...	1630	15	1290	17.0
JULY				
09...	1720	76	650	24.0
AUG.				
21...	1550	.27	1250	17.5
SEP.				
02...	1515	.32	1260	16.5

E - Estimated.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN
RED RIVER OF THE NORTH BASIN

05092000 - RED RIVER OF THE NORTH AT DRAYTON, N. DAK. (LAT 48 34 20 LONG 097 08 50)

OCT., 1974				
07...	1550	1720	460	6.5
DEC.				
19...	1210	1410	640	.0
FEB., 1975				
11...	1115	1420	540	.0
MAR.				
14...	1150	1500	530	.0
APR.				
04...	1145	2230	780	.0
23...	1215	30600	330	2.5
25...	1800	34600	342	6.0
MAY				
02...	1415	43600	430	6.0
06...	1205	40200	505	10.0
13...	1555	25200	620	15.0
28...	1120	6610	520	19.0
JUNE				
09...	1320	4500	600	18.0
JULY				
01...	1200	13800	435	23.5
07...	1120	25900	280	24.0
10...	1115	30800	295	23.0
14...	1115	32500	330	--
19...	1335	36400	385	24.5
AUG.				
22...	1635	2630	540	19.5
SEP.				
02...	1210	2400	540	19.0
03...	1555	2410	540	18.0

05092200 - PEMBINA COUNTY DRAIN 20 NEAR GLASSTON, N. DAK. (LAT 48 41 49 LONG 097 23 03)

APR., 1975				
18...	1415	19	500	.0
21...	1415	37	233	.5

05098700 - HIDDEN ISLAND COULEE NEAR HANSBORD, N. DAK. (LAT 48 57 10 LONG 099 25 35)

APR., 1975				
15...	1530	137	440	2.0
20...	1715	59	--	.0
30...	1630	124	--	5.0
JUNE				
11...	0925	.83	1410	13.5

05098800 - CYPRESS CREEK NEAR SARLES, N. DAK. (LAT 48 56 35 LONG 098 57 05)

APR., 1975				
15...	1750	84	455	3.0
20...	1505	18	--	4.5
30...	1435	46	--	5.0
JUNE				
10...	1555	.13	1250	16.5

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
 SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN
 RED RIVER OF THE NORTH BASIN

05099400 - LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, N.DAK. (LAT 48 51 55 LONG 098 00 20)

OCT., 1974				
10...	1420	2.2	850	16.0
NOV.				
19...	1230	1.1	900	2.0
DEC.				
16...	1545	.48	900	.0
19...	1230	--	900	.0
FEB., 1975				
06...	1430	.10	950	.0
MAR.				
17...	1255	.57	850	1.0
APR.				
12...	1240	197	280	.0
17...	1105	73	540	.5
22...	1015	97	592	.5
24...	1230	54	630	2.0
MAY				
08...	1120	21	715	9.0
JUNE				
06...	1240	3.7	910	15.0
JULY				
10...	1430	1.5	910	23.0
AUG.				
19...	1450	.30	860	15.0
SEP.				
10...	1200	16	750	16.0

05100000 - PEMBINA RIVER AT NECHE, N. DAK. (LAT 48 59 20 LONG 097 33 05)

OCT., 1974				
09...	1220	77	900	5.5
NOV.				
20...	1625	49	1010	.0
DEC.				
18...	1330	19	1100	.0
FEB., 1975				
07...	1155	9.0	1040	.0
10...	1245	8.1	--	.1
MAR.				
18...	1010	5.6	1100	.0
APR.				
22...	1700	210	525	.0
MAY				
12...	1545	1270	660	14.5
JUNE				
06...	1540	848	790	15.5
JULY				
11...	1050	252	800	21.0
AUG.				
20...	1210	78	900	15.5
SEP.				
11...	0950	55	860	14.0

05100500 - HERZOG CREEK NEAR CONCRETE, N. DAK. (LAT 48 45 13 LONG 097 54 22)

OCT., 1974				
09...	1800	26	560	8.5
NOV.				
20...	1000	E.50	750	1.0
DEC.				
02...	1615	E.10	--	.0
16...	1315	E.01	--	.0
APR., 1975				
16...	1455	.52	520	.0
21...	1605	.63	520	1.0
22...	1435	3.0	441	1.0
24...	1320	13	420	1.5
MAY				
15...	1645	.93	580	14.5
JUNE				
06...	1025	.11	700	10.5

E - Estimated.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN
RED RIVER OF THE NORTH BASIN

05116500 - DES LACS RIVER AT FOXHOLM, N. DAK. (LAT 48 22 14 LONG 101 34 11)

OCT., 1974				
03...	1045	10	1240	7.5
NOV.				
01...	0955	27	1260	4.0
DEC.				
03...	1140	14	1620	.0
JAN., 1975				
16...	1150	4.2	1610	.0
FEB.				
06...	1110	3.0	1950	.0
MAR.				
07...	1250	5.0	2200	.0
APR.				
09...	1950	6.5	1980	.0
20...	1455	954	390	.0
22...	1400	1280	405	2.0
24...	1235	769	485	4.0
MAY				
22...	1505	318	750	11.0
JUNE				
20...	0940	421	710	16.5
JULY				
11...	1300	123	1080	21.0
AUG.				
07...	1000	59	1110	22.0
SEP.				
10...	1155	94	950	15.5

05117500 - SOURIS RIVER ABOVE MINOT, N. DAK. (LAT 48 14 45 LONG 101 22 15)

OCT., 1974				
03...	1250	52	900	7.5
NOV.				
01...	1115	69	990	5.5
DEC.				
03...	0945	41	1070	.0
FEB., 1975				
06...	1345	22	1040	.0
MAR.				
07...	1530	65	975	.0
APR.				
10...	1920	.74	950	.0
19...	1135	940	635	.0
22...	0930	1870	520	2.0
MAY				
01...	1200	4190	585	5.5
05...	1920	5040	710	9.5
13...	1200	5640	565	13.5
30...	1120	3320	500	14.0
JULY				
11...	1105	400	730	22.5
AUG.				
07...	1130	62	1120	22.0
SEP.				
05...	1105	2.0	860	16.0

05120200 - WINTERING RIVER NEAR BERGEN, N. DAK. (LAT 47 55 50 LONG 100 40 15)

MAR., 1975				
17...	1840	.01	--	1.0
APR.				
19...	1215	337	293	.5
30...	1325	553	490	4.0
MAY				
14...	1000	27	950	13.0
20...	1640	9.1	1150	15.5
JUNE				
18...	1635	28	1200	22.5

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 5. HUDSON BAY BASIN
RED RIVER OF THE NORTH BASIN

05122000 - SOURIS RIVER NR BANTRY, N. DAK. (LAT 48 30 20 LONG 100 26 04)

OCT., 1974				
02...	1915	81	845	7.0
31...	1620	73	980	6.5
DEC.				
05...	1740	62	1170	.0
FEB., 1975				
05...	1725	41	1100	.0
MAR.				
06...	1600	28	1200	.0
APR.				
24...	1545	954	460	2.5
MAY				
07...	1340	4263	540	12.5
15...	1300	5070	675	16.0
JUNE				
03...	1530	4250	590	18.0
JULY				
10...	2215	1110	765	23.0
AUG.				
06...	1715	360	900	23.0
SEP.				
04...	1805	2.9	830	17.0

05123100 - OAK CREEK AT LAKE METIGOSHE OUTLET NR BOTTINEAU, N. DAK (LAT 48 57 56 LONG 100 21 47)

OCT., 1974				
02...	1340	3.8	455	5.5
31...	1155	5.7	455	6.0
JAN., 1975				
09...	1400	E.84	500	.5
FEB.				
05...	1215	E1.1	530	1.0
MAR.				
06...	1210	E1.3	555	1.0
APR.				
11...	1450	7.0	--	1.5
16...	1145	8.7	500	2.5
30...	1640	106	340	4.0
MAY				
08...	1530	131	410	7.0
29...	1540	91	440	14.0
JUNE				
25...	1030	36	440	20.5
JULY				
10...	1640	14	425	24.0
AUG.				
06...	1130	13	435	21.0
SEP.				
04...	1145	11	440	16.0

05123510 - DEEP RIVER NEAR UPHAM, N. DAK. (LAT 48 35 03 LONG 100 51 44)

APR., 1975				
16...	1915	34	540	5.0
25...	1025	537	460	6.5
MAY				
02...	1115	1770	460	6.0
07...	1330	550	530	11.0
JUNE				
05...	1810	20	875	19.0
JULY				
15...	1645	12	1075	27.5
AUG.				
13...	1100	2.0	850	21.0

05123600 - EGG CREEK NEAR GRANVILLE, N. DAK. (LAT 48 21 18 LONG 100 49 19)

APR., 1975				
20...	1000	244	460	1.0
25...	1255	261	555	9.0
29...	1130	720	480	5.0
MAY				
08...	1820	87	735	12.0
20...	2050	17	1170	15.5
JULY				
15...	1335	1.7	1400	26.5
AUG.				
14...	0930	1.6	1550	19.5
SEP.				
11...	1150	.26	1600	14.0

E - Estimated.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)
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PART 5. HUDSON BAY BASIN
RED RIVER OF THE NORTH BASIN

05123700 - CUT BANK CREEK AT NORTH LAKE OUTLET NR GRANVILLE, N. DAK. (LAT 48 23 10 LONG 100 46 00)

APR., 1975				
25...	1135	60	480	4.5
29...	1530	190	990	5.0
JUNE				
05...	1615	37	990	18.5
JULY				
15...	1440	12	1100	28.5
AUG.				
14...	1100	6.2	1000	21.5
SEP.				
11...	1305	2.0	1140	13.0

05123750 - CUTBANK CREEK AT UPHAM, N. DAK. (LAT 48 34 29 LONG 100 44 39)

APR., 1975				
16...	1725	18	490	2.0
19...	1735	18	700	4.0
29...	1925	98	660	7.5
MAY				
02...	1215	98	650	6.5
07...	1730	463	790	11.0
23...	1300	117	870	11.5
JUNE				
25...	1700	51	1090	26.0
JULY				
22...	1120	20	1150	23.0
AUG.				
13...	1200	9.0	1150	21.0
SEP.				
10...	1705	6.0	1180	17.5

05123900 - BOUNDARY CREEK NR LANDA, N. DAK. (LAT 48 48 46 LONG 100 51 46)

OCT., 1974				
02...	1130	E.01	1780	3.5
APR., 1975				
15...	2120	1360	350	.0
17...	1105	609	430	3.0
20...	1230	394	490	2.0
24...	1130	158	650	9.5
MAY				
19...	1345	20	1160	16.5
JUNE				
23...	2100	6.1	1530	25.5
JULY				
10...	1445	.18	1600	21.5

PART 6. MISSOURI RIVER BASIN
YELLOWSTONE RIVER BASIN

06329597 - CHARBONNEAU CREEK NEAR CHARBONNEAU, N. DAK. (LAT 47 51 10 LONG 103 47 40)

OCT., 1974				
02...	1450	.25	3250	12.0
NOV.				
07...	1425	.56	3300	5.5
DEC.				
04...	1405	.39	3750	1.0
JAN., 1975				
08...	1205	.54	3850	.0
FEB.				
05...	1235	.05	4750	.0
MAR.				
13...	1250	1.4	1800	.5
21...	1500	17	1050	.5
APR.				
14...	1345	91	429	4.0
17...	1700	350	340	.5
20...	1735	317	360	2.0
21...	1730	197	390	4.0
29...	1520	579	400	5.0
JUNE				
04...	1645	1.2	2400	19.0
JULY				
02...	1645	5.0	1290	27.0
AUG.				
06...	1620	.66	1900	27.0
SEP.				
05...	1125	.44	1800	16.0

E - Estimated.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
 SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 6. MISSOURI RIVER BASIN

LITTLE MUDDY CREEK BASIN

06331000 - LITTLE MUDDY RIVER BELOW COW CREEK NR WILLISTON, N. DAK. (LAT 48 17 04 LONG 103 34 21)

OCT., 1974				
02...	1250	5.7	2200	5.0
NOV.				
05...	1725	11	2120	4.0
DEC.				
04...	1245	9.2	2600	1.0
JAN., 1975				
08...	1425	8.7	2650	.0
FEB.				
06...	1600	5.4	3450	.0
MAR.				
13...	1510	5.8	2050	1.0
APR.				
21...	0920	1480	300	2.0
29...	1315	650	630	5.0
JUNE				
04...	0835	20	2150	16.0
JULY				
02...	0905	16	2070	23.0
AUG.				
06...	0925	7.0	2060	19.0
SEP.				
04...	1120	10	2100	16.0

WHITE EARTH RIVER BASIN

06332000 - WHITE EARTH RIVER AT WHITE EARTH, N. DAK. (LAT 48 22 35 LONG 102 46 00)

OCT., 1974				
02...	0955	3.0	1820	3.5
NOV.				
05...	1520	5.7	2450	2.5
DEC.				
04...	1050	3.7	2400	.0
JAN., 1975				
07...	1700	2.7	2190	.0
FEB.				
04...	1705	1.9	2340	.0
MAR.				
12...	1555	2.7	2000	.0
20...	1600	180	660	.0
APR.				
15...	1730	453	320	.5
17...	0950	739	420	.5
22...	1000	1930	360	3.0
29...	1010	1660	510	7.5
JUNE				
04...	1030	30	1220	15.0
JULY				
01...	1655	27	1780	25.0
AUG.				
06...	1120	4.2	2200	20.0

SHELL CREEK BASIN

06332520 - SHELL CREEK NEAR PARSHALL, N. DAK. (LAT 48 03 11 LONG 102 08 10)

NOV., 1974				
04...	1550	4.3	3000	3.5
DEC.				
02...	1350	.53	3300	.0
JAN., 1975				
06...	1605	.47	2225	.0
FEB.				
03...	1540	.03	2470	.0
APR.				
16...	1330	338	350	.5
23...	1125	549	790	6.0
30...	1045	484	690	5.0
JUNE				
02...	1730	15	2150	18.0
30...	1905	37	1900	26.0
AUG.				
04...	1545	3.0	2520	24.0
SEP.				
02...	1725	6.8	2500	15.0
29...	1440	10	2550	11.5

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 6. MISSOURI RIVER BASIN

LITTLE MISSOURI RIVER BASIN

06335500 - LITTLE MISSOURI RIVER AT MARMARTH, N. DAK. (LAT 46 17 44 LONG 103 55 06)

OCT., 1974				
02...	1155	4.6	3160	11.0
NOV.				
05...	1320	42	2020	.5
DEC.				
11...	1555	5.7	3600	.0
JAN., 1975				
08...	1255	4.1	3800	.0
FEB.				
05...	1440	.67	3300	.0
MAR.				
11...	1740	26	1800	.0
19...	1600	512	1070	1.0
APR.				
15...	1710	1910	680	2.5
MAY				
07...	1435	3700	1140	11.0
14...	1455	3420	635	17.0
JUNE				
04...	1350	346	1550	20.0
JULY				
09...	1620	314	1390	25.0
AUG.				
06...	1345	28	2000	29.0
SEP.				
04...	1310	11	2330	21.0

06336000 - LITTLE MISSOURI RIVER AT MEDORA, N. DAK. (LAT 46 55 10 LONG 103 31 40)

OCT., 1974				
17...	1200	12	2680	10.0
NOV.				
25...	1150	27	2600	.5
DEC.				
20...	1535	2.5	4200	.0
MAR., 1975				
17...	1420	970	2360	1.0
21...	1710	600	1650	4.0
APR.				
11...	1350	3490	690	3.0
23...	1320	2320	920	8.0
MAY				
02...	1405	1460	1230	9.5
09...	1615	19600	640	10.0
15...	1215	4720	710	17.0
JUNE				
10...	1215	937	1700	19.0
JULY				
14...	1250	190	1600	27.0
AUG.				
11...	1125	36	2200	22.0
SEP.				
16...	1145	14	2500	18.0

KNIFE RIVER BASIN

06339100 - KNIFE RIVER AT MANNING, N. DAK. (LAT 47 14 10 LONG 102 46 10)

OCT., 1974				
03...	1615	.10	1900	11.0
NOV.				
08...	1135	1.7	2250	4.5
DEC.				
04...	1025	1.3	2990	.0
JAN., 1975				
09...	1250	.82	2980	.0
FEB.				
07...	1320	.17	3380	.0
12...	1215	31	1090	.0
MAR.				
13...	1430	.81	3580	.0
19...	1500	69	940	1.0
APR.				
15...	1530	7.0	1240	.0
20...	1740	1550	210	.5
23...	1115	1300	210	6.0
JUNE				
05...	1450	7.6	1890	18.0
JULY				
02...	2115	111	2050	22.0
AUG.				
08...	1135	1.2	1950	21.0
SEP.				
05...	1620	.90	2200	14.0

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 6. MISSOURI RIVER BASIN

KNIFE RIVER BASIN

06339490 - ELM CREEK NEAR GOLDEN VALLEY, N. DAK. (LAT 47 06 25 LONG 102 03 05)

MAR., 1975				
20...	1300	6.0	910	.5
APR.				
14...	1440	3.0	600	.0
21...	1245	352	290	3.5
30...	1240	166	390	4.5
JUNE				
11...	1125	31	1900	14.0
JULY				
15...	1015	.34	2000	22.0
AUG.				
12...	1030	.01	1770	17.0

06339500 - KNIFE RIVER NEAR GOLDEN VALLEY, N. DAK. (LAT 47 09 40 LONG 102 03 39)

OCT., 1974				
16...	1625	2.6	2390	9.0
NOV.				
26...	1220	6.7	2900	.5
DEC.				
20...	1020	4.9	3500	.0
JAN., 1975				
14...	1205	1.2	4000	.5
FEB.				
13...	1125	1.5	5200	.0
MAR.				
13...	1120	4.0	5800	.0
20...	1410	56	2100	.0
APR.				
14...	1555	62	1250	.0
21...	1440	3800	300	3.0
30...	1430	4480	375	6.0
JUNE				
11...	1430	544	1600	21.0
JULY				
15...	1230	29	1850	26.0
AUG.				
12...	1200	11	1720	21.0
SEP.				
18...	1340	6.2	1930	13.0

06340200 - WEST BRANCH OTTER CREEK NEAR BEULAH, N. DAK. (LAT 47 08 05 LONG 101 39 35)

MAR., 1975				
17...	1155	1.9	1000	.0.
APR.				
17...	1210	20	400	--
21...	1020	71	330	--
23...	1220	32	340	6.0
MAY				
29...	0955	2.0	1800	14.0

TURTLE CREEK BASIN

06341400 - TURTLE CREEK NEAR TURTLE LAKE, N. DAK. (LAT 47 27 30 LONG 100 55 15)

APR., 1975				
17...	1425	7.1	350	2.0
21...	1130	3.0	600	5.0
MAY				
19...	1345	1.5	3600	18.5
JUNE				
19...	1545	1.3	3000	17.0
JULY				
24...	1130	1.0	2200	19.5

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 6. MISSOURI RIVER BASIN

SQUARE BUTTE CREEK BASIN

06342100 - SQUARE BUTTE CREEK TRIBUTARY NO 2 NEAR CENTER, N. DAK. (LAT 47 06 40 LONG 101 15 05)

MAR., 1975				
16...	1350	1.5	610	.0
APR.				
16...	1445	1.2	460	.0
17...	1730	2.0	355	.0
23...	1340	19	290	--
MAY				
02...	1045	4.5	480	6.0
15...	1025	.74	950	15.0
JUNE				
20...	0915	.50	1000	15.5
AUG.				
27...	1100	.12	1040	17.0

06342260 - SQUARE BUTTE CREEK BELOW CENTER, N. DAK. (LAT 47 03 25 LONG 101 11 35)

OCT., 1974				
24...	1130	.86	950	7.5
NOV.				
19...	1120	1.2	1010	3.0
DEC.				
29...	1215	1.5	1400	3.0
FEB., 1975				
28...	1430	2.2	1190	.0
APR.				
23...	1430	198	675	3.0
24...	1300	57	675	9.0
MAY				
02...	1030	31	600	9.0
15...	1125	5.4	700	15.0
JUNE				
20...	1615	1.4	750	16.0
JULY				
22...	0910	1.8	1080	21.0
AUG.				
27...	1550	1.0	1000	20.0
SEP.				
25...	1340	.82	990	19.0

BURNT CREEK BASIN

06342450 - BURNT CREEK NEAR BISMARCK, N. DAK. (LAT 46 54 54 LONG 100 48 48)

MAR., 1975				
21...	1700	29	520	.0
APR.				
14...	1255	8.7	520	.0
16...	1605	338	180	.0
22...	1000	101	280	1.0
30...	1440	47	520	5.0
JUNE				
19...	0955	4.3	1100	15.5

HEART RIVER BASIN

06344600 - GREEN RIVER NEAR NEW HRADEC, N. DAK. (LAT 47 01 40 LONG 103 03 10)

OCT., 1974				
17...	1455	.52	1200	8.0
NOV.				
25...	1405	1.0	1130	2.0
DEC.				
20...	1640	.72	1370	.0
JAN., 1975				
13...	1325	.03	1440	1.0
FEB.				
10...	1425	.21	1500	.0
MAR.				
11...	1350	.30	1050	--
21...	1505	8.2	525	.0
APR.				
11...	1600	1.0	1000	1.0
23...	1535	429	209	5.5
MAY				
02...	1205	49	420	6.5
JULY				
14...	1615	1.4	1280	28.0
AUG.				
11...	1355	.47	1180	25.0
SEP.				
11...	1150	.30	6930	14.0
16...	1445	.73	1200	18.0
18...	1210	6.8	2230	13.0

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
 SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 6. MISSOURI RIVER BASIN

HEART RIVER BASIN

06345000 - GREEN RIVER NEAR GLADSTONE, N. DAK. (LAT 46 53 40 LONG 102 37 25)

OCT., 1974				
18...	1625	3.0	2310	10.5
NOV.				
25...	1605	5.0	2230	.0
DEC.				
20...	1230	3.4	2650	.0
JAN., 1975				
13...	1610	.82	2550	.0
FEB.				
13...	1655	1.6	2850	.0
MAR.				
20...	1800	14	1400	.0
APR.				
03...	1155	9.0	1400	.0
14...	1150	7.0	1470	.0
22...	1215	3840	240	4.0
24...	1120	1220	275	5.0
MAY				
02...	1625	191	565	6.5
JUNE				
12...	1035	83	1620	18.0
JULY				
17...	1010	6.0	1730	25.0
AUG.				
11...	1650	10	1910	24.0
SEP.				
17...	1400	2.3	2200	17.0

06345500 - HEART RIVER NEAR RICHARDTON, N. DAK. (LAT 46 44 46 LONG 102 18 27)

NOV., 1974				
04...	1105	19	2670	2.5
DEC.				
03...	1245	7.9	2920	.0
12...	1510	3.6	2550	.5
JAN., 1975				
03...	1515	9.6	3190	.0
06...	1655	2.8	2400	.0
FEB.				
03...	1145	5.6	3500	.0
28...	1120	5.0	3100	.5
MAR.				
21...	1150	5.4	1260	.0
APR.				
04...	1240	12	1620	.0
21...	1930	6700	455	3.0
24...	1315	3390	380	5.0
29...	1800	5995	480	5.5
JUNE				
04...	1130	63	1710	18.0
10...	1520	46	14	16.0
30...	1245	42	1690	25.0
AUG.				
01...	1040	12	1860	24.0

06347000 - ANTELOPE CREEK NEAR CARSON, N. DAK. (LAT 46 31 50 LONG 101 38 25)

OCT., 1974				
25...	1145	.66	650	5.5
NOV.				
18...	1230	1.8	750	1.0
DEC.				
24...	1320	1.3	980	.0
FEB., 1975				
26...	0955	.20	1550	1.0
MAR.				
15...	1405	E2.0	--	.0
19...	0955	9.3	550	.0
19...	1000	9.3	550	.0
APR.				
02...	1335	2.2	840	.0
11...	1115	5.3	660	.0
16...	1150	70	560	--
23...	1345	225	440	2.0
MAY				
02...	1045	64	700	6.5
28...	1045	20	1280	14.5
JUNE				
20...	1410	28	1350	21.0
JULY				
23...	1220	2.9	950	24.0
AUG.				
26...	1230	18	900	17.0
SEP.				
24...	1320	1.0	750	15.5

E - Estimated.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 6. MISSOURI RIVER BASIN

HEART RIVER BASIN

06348000 - HEART RIVER NEAR LARK, N. DAK. (LAT 46 36 37 LONG 101 22 54)

OCT., 1974				
25...	1315	21	1380	10.0
NOV.				
18...	1425	14	1470	2.0
DEC.				
28...	1015	17	2900	6.5
FEB., 1975				
26...	1445	2.8	2800	.0
MAR.				
15...	1350	12	1500	.0
APR.				
04...	1100	36	1200	.0
19...	1745	3300	340	.0
22...	1430	3920	646	2.5
MAY				
02...	1305	4050	610	5.5
30...	1340	325	850	15.5
JUNE				
27...	1110	272	900	22.0
JULY				
23...	1340	39	1150	25.0
AUG.				
26...	1230	91	1050	20.0
SEP.				
24...	1430	42	1100	18.0

06348500 - SWEETBRIAR CREEK NEAR JUDSON, N. DAK. (LAT 46 51 06 LONG 101 15 10)

OCT., 1974				
21...	1415	.57	1130	10.0
NOV.				
27...	1045	.44	1280	1.0
JAN., 1975				
27...	1155	.33	1800	.0
FEB.				
27...	1115	.44	1800	.5
APR.				
02...	1645	.70	1460	.0
17...	0925	3.0	580	.0
20...	1015	510	350	1.5
22...	1715	517	225	2.0
MAY				
02...	1315	41	380	7.0
08...	1625	88	340	10.0
30...	1525	1.5	650	17.5
JUNE				
30...	1240	2.3	780	25.0
AUG.				
26...	1550	.28	1450	20.0
SEP.				
25...	0945	.22	1300	14.0

CANNONBALL RIVER BASIN

06350000 - CANNONBALL RIVER AT REGENT, N. DAK. (LAT 46 25 36 LONG 102 33 05)

OCT., 1974				
07...	1040	2.4	2200	5.5
NOV.				
07...	1105	4.2	2300	3.5
FEB., 1975				
03...	1240	2.2	2800	.0
MAR.				
10...	1200	3.0	2300	.0
18...	1305	5.2	1700	.5
APR.				
21...	2030	2220	600	.5
29...	1330	2745	680	4.5
JUNE				
06...	0950	22	2030	17.0
JULY				
10...	1645	21	2740	24.0
AUG.				
07...	1725	4.6	2290	26.0
SEP.				
05...	1740	3.4	2100	19.0

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
 SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 6. MISSOURI RIVER BASIN

CANNONBALL RIVER BASIN

06351000 - CANNONBALL RIVER BELOW BENTLEY, N. DAK. (LAT 46 21 30 LONG 102 02 30)

OCT., 1974				
07...	1305	3.8	2180	7.5
NOV.				
04...	1305	9.4	2690	4.0
DEC.				
10...	1420	6.8	2790	.5
JAN., 1975				
07...	0930	3.7	2700	.0
FEB.				
03...	1525	5.2	3050	.0
MAR.				
10...	1415	7.0	2400	.0
20...	1715	35	1260	1.0
APR.				
22...	1215	3180	658	1.5
MAY				
01...	1400	2480	720	6.0
JUNE				
05...	1750	50	1990	20.0
JULY				
10...	1305	56	2570	24.0
AUG.				
07...	1330	11	2350	24.0
SEP.				
05...	1605	71	6930	19.0

06351680 - WHITE BUTTE FORK CEDAR CREEK NEAR SCRANTON, N. DAK. (LAT 46 19 20 LONG 102 59 45)

MAR., 1975				
19...	1850	1.0	2850	.5
APR.				
19...	1355	8.0	1200	.5
MAY				
08...	1545	412	1230	9.0
JUNE				
03...	1255	2.2	4000	18.0
JULY				
09...	1855	1.9	3800	25.0

06352000 - CEDAR CREEK NEAR HAYNES, N. DAK. (LAT 46 09 15 LONG 102 28 25)

OCT., 1974				
07...	1745	1.2	2400	9.5
NOV.				
04...	1635	1.8	2060	4.0
DEC.				
12...	1325	2.3	2200	.5
JAN., 1975				
07...	1410	2.2	5000	.0
FEB.				
04...	1010	1.6	4200	.0
MAR.				
10...	1820	2.0	2000	.0
20...	1225	14	1460	.5
APR.				
17...	1825	45	1590	.0
22...	2015	1250	1300	1.0
29...	1500	2000	830	5.0
JUNE				
05...	1100	29	2240	17.0
JULY				
10...	1505	16	3000	24.0
AUG.				
07...	1555	2.9	2700	26.0
SEP.				
05...	1035	2.4	2500	16.0

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 6. MISSOURI RIVER BASIN

CANNONBALL RIVER BASIN

06352500 - CEDAR CREEK NEAR PRETTY ROCK, N. DAK. (LAT 46 01 55 LONG 101 49 55)

NOV., 1974				
04...	1440	.02	3800	6.5
DEC.				
10...	1620	2.7	4200	1.0
JAN., 1975				
07...	1140	2.4	6700	.0
FEB.				
03...	1725	2.4	6000	.0
MAR.				
10...	1620	4.0	4350	.0
20...	1515	30	2500	1.0
APR.				
17...	1520	102	1130	1.0
22...	1740	851	995	3.0
MAY				
01...	1635	2570	1010	6.5
JUNE				
05...	1420	78	2500	19.0
JULY				
10...	0955	32	2950	23.0
AUG.				
07...	1035	6.4	2890	23.0
SEP.				
05...	1315	57	1790	18.0

06353000 - CEDAR CREEK NEAR RALEIGH, N. DAK. (LAT 46 05 00 LONG 101 20 00)

MAR., 1975				
15...	1130	3.3	4000	.0
19...	1200	94	870	.5
APR.				
02...	1100	.26	2700	.0
11...	1420	200	230	.0
15...	1430	400	200	.0
19...	1200	325	375	.5
23...	1700	1120	730	3.5
30...	1120	1340	1200	6.0
MAY				
12...	1150	3330	900	12.0
28...	1300	198	1600	17.0
JUNE				
20...	1110	136	1700	20.0
JULY				
23...	0950	18	2650	24.0
SEP.				
24...	1050	1.6	1550	13.0

BEAVER CREEK BASIN

06354500 - BEAVER CREEK AT LINTON, N. DAK. (LAT 46 15 27 LONG 100 13 58)

NOV., 1974				
18...	1120	.65	1240	.5
DEC.				
23...	1210	1.3	1550	.0
JAN., 1975				
04...	1130	.97	700	.0
28...	1055	.13	1610	.0
MAR.				
17...	1005	1.8	1050	.5
21...	1150	50	625	.5
APR.				
16...	1215	52	460	.0
21...	1550	498	320	.5
30...	1115	151	520	6.0
MAY				
30...	1510	37	800	16.0
JUNE				
30...	1225	67	575	23.5
AUG.				
04...	1200	6.7	900	32.0
SEP.				
02...	1230	.85	880	19.0

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 6. MISSOURI RIVER BASIN

GRAND RIVER BASIN

06355000 - NORTH FORK GRAND RIVER AT HALEY, N. DAK. (LAT 45 57 39 LONG 103 07 09)

OCT., 1974				
03...	1055	1.2	2900	9.5
NOV.				
05...	1615	1.5	3000	5.0
DEC.				
12...	1045	1.5	3800	.5
JAN., 1975				
07...	1620	1.4	3650	.5
FEB.				
04...	1655	.67	3300	.0
MAR.				
12...	1115	2.0	2800	.0
APR.				
17...	1030	7.3	1500	.5
MAY				
07...	1755	267	1830	9.5
JUNE				
04...	1650	20	2000	19.0
JULY				
08...	1105	19	1890	24.0
AUG.				
05...	1055	2.1	2530	20.0
SEP.				
04...	1630	1.7	2730	20.0

JAMES RIVER BASIN

06467600 - JAMES RIVER NEAR MANFRED, N. DAK. (LAT 47 38 40 LONG 099 49 40)

MAR., 1975				
16...	1630	.72	180	1.0
19...	1210	5.1	320	.0
APR.				
15...	1115	125	190	1.5
17...	1030	225	150	.0
23...	1400	100	307	6.5
MAY				
13...	1235	8.4	780	15.0
27...	1325	3.0	800	16.5

06467900 - BIG SLOUGH AT HAMBERG, N. DAK. (LAT 47 45 20 LONG 099 30 42)

APR., 1975				
19...	1300	44	260	.5
23...	1345	29	300	4.0
MAY				
13...	1100	14	600	14.0
27...	1440	2.9	800	16.5

06468170 - JAMES RIVER NEAR GRACE CITY, N. DAK. (LAT 47 33 29 LONG 098 51 45)

NOV., 1974				
20...	1500	.58	1525	3.0
MAR., 1975				
18...	1550	10	580	.5
APR.				
23...	1100	597	280	4.5
MAY				
01...	1200	882	310	5.0
07...	1445	395	410	10.5
27...	1640	55	610	18.0
JUNE				
25...	1645	55	700	27.0
JULY				
03...	0920	51	590	22.0
AUG.				
07...	1130	.90	880	22.0
SEP.				
04...	1645	.77	950	18.5
25...	1305	.27	1200	13.0
30...	1500	.37	1250	9.5

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SURFACE-WATER QUALITY SITES
 SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)
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PART 6. MISSOURI RIVER BASIN

JAMES RIVER BASIN

06469400 - PIPESTEM CREEK NR. PINGREE, N. DAK. (LAT 47 10 03 LONG 098 58 07)

APR., 1975				
18...	1720	1650	130	1.0
23...	0900	966	268	5.5
25...	1300	532	290	--
MAY				
07...	1640	137	440	10.0
28...	1010	19	725	16.5
JUNE				
26...	1445	46	510	25.0
JULY				
03...	0700	126	710	22.0
AUG.				
06...	1030	4.1	775	20.0
SEP.				
30...	1805	.21	950	10.5

06470000 - JAMES RIVER AT JAMESTOWN, N. DAK. (LAT 46 53 22 LONG 098 40 58)

OCT., 1974				
29...	1525	4.5	975	10.5
NOV.				
22...	0930	1.5	1050	2.0
DEC.				
20...	1500	3.4	--	1.0
JAN., 1975				
31...	1050	2.1	1300	.0
MAR.				
04...	1910	4.3	1225	1.5
17...	1610	23	800	.5
APR.				
03...	1100	4.3	975	.0
22...	1615	187	320	3.5
JULY				
02...	1300	40	460	22.0
AUG.				
05...	1500	28	600	24.5
SEP.				
03...	1540	306	460	19.5

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS WATER-QUALITY LAKE SITES
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

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DATE	TIME	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
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PART 6. MISSOURI RIVER BASIN

HEART RIVER BASIN

06343500 - E A PATTERSON LAKE NEAR DICKINSON, N. DAK. (LAT 46 52 11 LONG 102 49 37)

NOV., 1974									
01...	1230	3.4	60	40	64	44	330	9.4	294

06348490 - SWEETBRIAR RES. NR JUDSON, N. DAK. (LAT 46 51 55 LONG 101 15 35)

NOV., 1974									
03...	1500	2.4	210	40	19	15	120	8.0	309

CANNONBALL RIVER BASIN

06354810 - FROELICH RESERVOIR NEAR SELFIDGE, N. DAK. (LAT 46 10 00 LONG 100 59 00)

NOV., 1974									
02...	1630	2.4	40	20	17	6.4	62	8.1	213

GRAND RIVER BASIN

06354988 - BOWMAN-HALEY LAKE NEAR HALEY, N. DAK. (LAT 45 59 06 LONG 103 14 43)

NOV., 1974									
02...	0930	3.0	110	20	50	45	380	9.3	319

CANNONBALL RIVER BASIN

462020101511501 - SHEEP CREEK RES. NR NEW LEIPZIG, N. DAK. (LAT 46 20 20 LONG 101 51 15.01)

NOV., 1974									
02...	1400	2.7	40	320	160	27	380	12	401

APPLE CREEK BASIN

464902099445801 - LAKE ISABEL NR DAWSON, N. DAK. (LAT 46 49 02 LONG 099 44 58.01)

NOV., 1974									
03...	1030	10	100	20	5.6	160	530	59	817

HEART RIVER BASIN

465232101060201 - CROWN BUTTE RES. NR MANDAN, N. DAK. (LAT 46 52 32 LONG 101 06 02.01)

NOV., 1974									
03...	1300	3.4	100	40	35	30	92	16	310

TURTLE CREEK BASIN

473147100433801 - BRUSH LAKE NR MERCER, N. DAK. (LAT 47 31 47 LONG 100 43 38.01)

NOV., 1974									
04...	1000	4.3	60	20	29	70	130	21	475

RED RIVER OF THE NORTH BASIN

474540099554301 - HARVEY RES. AT HARVEY, N. DAK. (LAT 47 45 40 LONG 099 55 43.01)

NOV., 1974									
04...	1330	3.7	150	10	20	39	250	12	433

480049099504601 - BUFFALO LAKE NR ESMOND, N. DAK. (LAT 48 00 49 LONG 099 50 46.01)

NOV., 1974									
05...	1030	9.9	130	20	15	35	280	16	656

LITTLE KNIFE RIVER BASIN

481731102231001 - STANLEY RES. AT STANLEY, N. DAK. (LAT 48 17 31 LONG 102 23 10.01)

OCT., 1974									
31...	1300	18	80	80	69	80	350	15	548

BEAVER CREEK BASIN

482456102560801 - TIOGA RES. AT TIOGA, N. DAK. (LAT 48 24 56 LONG 102 56 08.01)

OCT., 1974									
30...	1115	4.9	80	60	44	19	12	8.7	161

LITTLE MUDDY CREEK BASIN

482554103442901 - BLACKTAIL RES. NR BONETRAIL, N. DAK. (LAT 48 25 54 LONG 103 44 29.01)

OCT., 1974									
31...	0900	.2	40	60	29	48	150	9.4	220

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS WATER-QUALITY LAKE SITES

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	CAR- BONATE (CO3) (MG/L)	ALKA- LITY AS CACO3 (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
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PART 6. MISSOURI RIVER BASIN

HEART RIVER BASIN

06343500 - E A PATTERSON LAKE NEAR DICKINSON, N. DAK. (LAT 46 52 11 LONG 102 49 37)

NOV., 1974 01...	34	298	740	11	.6	.56	.09	1360	1.85
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06348490 - SWEETBRIAR RES. NR JUDSON, N. DAK. (LAT 46 51 55 LONG 101 15 35)

NOV., 1974 03...	4	260	130	2.9	.6	.34	.05	453	.62
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CANNONBALL RIVER BASIN

06354810 - FROELICH RESERVOIR NEAR SELFRIDGE, N. DAK. (LAT 46 10 00 LONG 100 59 00)

NOV., 1974 02...	5	183	20	2.7	.4	.23	.02	206	.28
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GRAND RIVER BASIN

06354988 - BOWMAN-HALEY LAKE NEAR HALEY, N. DAK. (LAT 45 59 06 LONG 103 14 43)

NOV., 1974 02...	24	302	820	7.1	.7	.56	.08	1480	2.01
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CANNONBALL RIVER BASIN

462020101511501 - SHEEP CREEK RES. NR NEW LEIPZIG, N. DAK. (LAT 46 20 20 LONG 101 51 15.01)

NOV., 1974 02...	19	361	960	6.8	.5	.56	.06	1740	2.37
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APPLE CREEK BASIN

464902099445801 - LAKE ISABEL NR DAWSON, N. DAK. (LAT 46 49 02 LONG 099 44 58.01)

NOV., 1974 03...	365	1280	610	43	.6	.23	.01	2250	3.06
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HEART RIVER BASIN

465232101060201 - CROWN BUTTE RES. NR MANDAN, N. DAK. (LAT 46 52 32 LONG 101 06 02.01)

NOV., 1974 03...	12	274	130	6.3	.3	.56	.03	488	.66
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TURTLE CREEK BASIN

473147100433801 - BRUSH LAKE NR MERCER, N. DAK. (LAT 47 31 47 LONG 100 43 38.01)

NOV., 1974 04...	49	471	170	10	.5	.23	.02	718	.98
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RED RIVER OF THE NORTH BASIN

474540099554301 - HARVEY RES. AT HARVEY, N. DAK. (LAT 47 45 40 LONG 099 55 43.01)

NOV., 1974 04...	88	502	240	24	.5	.56	.09	902	1.23
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480049099504601 - BUFFALO LAKE NR ESMOND, N. DAK. (LAT 48 00 49 LONG 099 50 46.01)

NOV., 1974 05...	83	676	130	19	.6	.56	.08	986	1.34
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LITTLE KNIFE RIVER BASIN

481731102231001 - STANLEY RES. AT STANLEY, N. DAK. (LAT 48 17 31 LONG 102 23 10.01)

OCT., 1974 31...	52	536	390	190	.6	.23	1.2	1460	1.99
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BEAVER CREEK BASIN

482456102560801 - TIOGA RES. AT TIOGA, N. DAK. (LAT 48 24 56 LONG 102 56 08.01)

OCT., 1974 30...	7	144	55	18	.3	.23	.01	231	.31
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LITTLE MUDDY CREEK BASIN

482554103442901 - BLACKTAIL RES. NR BONETRAIL, N. DAK. (LAT 48 25 54 LONG 103 44 29.01)

OCT., 1974 31...	51	265	330	4.1	.3	.23	.03	736	1.00
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ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS WATER-QUALITY LAKE SITES

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CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED BORON (B) (UG/L)
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PART 6. MISSOURI RIVER BASIN

HEART RIVER BASIN

06343500 - E A PATTERSON LAKE NEAR DICKINSON, N. DAK. (LAT 46 52 11 LONG 102 49 37)

NOV., 1974 01...	340	43	67	7.8	1900	8.9	6.0	390
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06348490 - SWEETBRIAR RES. NR JUDSON, N. DAK. (LAT 46 51 55 LONG 101 15 35)

NOV., 1974 03...	110	0	69	5.0	750	9.3	5.0	240
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CANNONBALL RIVER BASIN

06354810 - FROELICH RESERVOIR NEAR SELFRIDGE, N. DAK. (LAT 46 10 00 LONG 100 59 00)

NOV., 1974 02...	69	0	63	3.3	400	8.6	7.5	80
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GRAND RIVER BASIN

06354988 - BOWMAN-HALEY LAKE NEAR HALEY, N. DAK. (LAT 45 59 06 LONG 103 14 43)

NOV., 1974 02...	310	8	72	9.4	2100	9.0	7.0	630
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CANNONBALL RIVER BASIN

462020101511501 - SHEEP CREEK RES. NR NEW LEIPZIG, N. DAK. (LAT 46 20 20 LONG 101 51 15.01)

NOV., 1974 02...	510	150	61	7.3	2300	8.8	7.0	310
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APPLE CREEK BASIN

464902099445801 - LAKE ISABEL NR DAWSON, N. DAK. (LAT 46 49 02 LONG 099 44 58.01)

NOV., 1974 03...	670	0	61	8.9	3050	9.9	4.0	1700
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HEART RIVER BASIN

465232101060201 - CROWN BUTTE RES. NR MANDAN, N. DAK. (LAT 46 52 32 LONG 101 06 02.01)

NOV., 1974 03...	210	0	46	2.8	840	8.8	4.5	200
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TURTLE CREEK BASIN

473147100433801 - BRUSH LAKE NR MERCER, N. DAK. (LAT 47 31 47 LONG 100 43 38.01)

NOV., 1974 04...	360	0	42	3.0	1110	9.2	4.5	430
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RED RIVER OF THE NORTH BASIN

474540099554301 - HARVEY RES. AT HARVEY, N. DAK. (LAT 47 45 40 LONG 099 55 43.01)

NOV., 1974 04...	210	0	71	7.5	1300	9.7	5.0	790
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480049099504601 - BUFFALO LAKE NR ESMOND, N. DAK. (LAT 48 00 49 LONG 099 50 46.01)

NOV., 1974 05...	180	0	75	9.0	1410	9.5	2.0	280
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LITTLE KNIFE RIVER BASIN

481731102231001 - STANLEY RES. AT STANLEY, N. DAK. (LAT 48 17 31 LONG 102 23 10.01)

OCT., 1974 31...	500	0	59	6.8	2300	8.9	7.0	310
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BEAVER CREEK BASIN

482456102560801 - TIOGA RES. AT TIOGA, N. DAK. (LAT 48 24 56 LONG 102 56 08.01)

OCT., 1974 30...	190	44	12	.4	440	8.5	8.0	120
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LITTLE MUDDY CREEK BASIN

482554103442901 - BLACKTAIL RES. NR BONETRAIL, N. DAK. (LAT 48 25 54 LONG 103 44 29.01)

OCT., 1974 31...	270	4	54	4.0	1090	9.4	8.0	240
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ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS WATER-QUALITY LAKE SITES

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DATE	TIME	DIS-SOLVED SILICA (SI02) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
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PART 6. MISSOURI RIVER BASIN

WHITE EARTH RIVER BASIN

482731102444401 - WHITE EARTH RES. NR WHITE EARTH, N. DAK. (LAT 48 27 31 LONG 102 44 44.01)

OCT., 1974									
30...	1530	2.1	130	100	52	58	210	11	421

483503102561701 - MC GREGOR RES. AT MC GREGOR, N. DAK. (LAT 48 35 03 LONG 102 56 17.01)

OCT., 1974									
30...	0900	10	0	480	57	31	16	11	171

RED RIVER OF THE NORTH BASIN

485515102163301 - NORTH GATE RES. NR NORTH GATE, N. DAK. (LAT 48 55 15 LONG 102 16 33.01)

OCT., 1974									
29...	1600	7.0	80	160	36	22	59	12	213

DATE	CARBONATE (CO3) (MG/L)	ALKALINITY AS CaCO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED ORTHOPHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)
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PART 6. MISSOURI RIVER BASIN

WHITE EARTH RIVER BASIN

482731102444401 - WHITE EARTH RES. NR WHITE EARTH, N. DAK. (LAT 48 27 31 LONG 102 44 44.01)

OCT., 1974									
30...	46	422	370	16	.5	.23	.22	1010	1.37

483503102561701 - MC GREGOR RES. AT MC GREGOR, N. DAK. (LAT 48 35 03 LONG 102 56 17.01)

OCT., 1974									
30...	12	160	140	4.1	.3	.23	.08	393	.53

RED RIVER OF THE NORTH BASIN

485515102163301 - NORTH GATE RES. NR NORTH GATE, N. DAK. (LAT 48 55 15 LONG 102 16 33.01)

OCT., 1974									
29...	0	175	130	11	.2	.23	.10	401	.55

DATE	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS) (UNITS)	PH	TEMPERATURE (DEG C)	DIS-SOLVED BORON (B) (UG/L)
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PART 6. MISSOURI RIVER BASIN

WHITE EARTH RIVER BASIN

482731102444401 - WHITE EARTH RES. NR WHITE EARTH, N. DAK. (LAT 48 27 31 LONG 102 44 44.01)

OCT., 1974								
30...	370	0	54	4.8	1480	8.9	8.0	280

483503102561701 - MC GREGOR RES. AT MC GREGOR, N. DAK. (LAT 48 35 03 LONG 102 56 17.01)

OCT., 1974								
30...	270	110	11	.4	580	8.6	7.5	160

RED RIVER OF THE NORTH BASIN

485515102163301 - NORTH GATE RES. NR NORTH GATE, N. DAK. (LAT 48 55 15 LONG 102 16 33.01)

OCT., 1974								
29...	180	6	40	1.9	610	8.2	7.0	200

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS GROUND-WATER QUALITY SITES

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LOCAL IDENT- IFIER	DATE OF SAMPLE	TIME	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
BOTTINEAU COUNTY										
159-081-11888	73-04-03	0955	12	--	30	1300	51	24	18	3.5
	73-06-26	0905	12	--	110	1300	53	25	19	3.5
	73-10-01	1415	17	--	40	980	60	27	18	3.7
	74-01-14	1515	6.3	--	20	300	37	30	18	2.8
	74-07-24	1500	6.1	--	20	300	32	27	18	3.2
	74-09-12	1345	10	--	50	490	44	28	17	2.8
	74-12-14	1300	8.5	--	30	330	42	28	17	2.4
	75-03-20	1515	6.9	--	50	280	30	32	18	2.2
	75-06-26	1020	11	--	30	630	49	29	14	2.0
	75-09-10	1445	14	--	20	650	57	29	14	2.0
BOWMAN COUNTY										
131-099-21000	74-05-17	1000	--	--	--	--	--	--	--	--
	74-08-28	--	6.4	--	--	--	4.4	13	510	11
	74-11-21	1000	7.4	50	90	30	6.9	4.3	500	4.3
	74-11-21	1215	7.5	50	40	20	6.2	4.2	500	4.6
	75-05-01	1230	7.5	70	40	30	5.3	3.1	530	4.4
131-099-22CC8	74-04-25	1600	--	--	770	60	24	7.8	430	4.6
	74-11-25	1430	13	40	140	110	24	18	500	5.5
	75-05-01	1000	11	40	250	230	49	49	600	6.7
131-099-29888	74-05-01	1600	9.7	--	190	40	9.2	2.8	380	4.2
	74-11-22	1000	9.8	70	60	60	5.5	2.8	400	3.6
131-099-33CCC	75-05-01	1520	9.1	20	60	50	49	1.1	380	2.7
	74-04-30	1400	13	--	590	280	130	100	630	18
	74-11-20	1430	12	0	10	500	130	100	670	15
	75-04-28	1600	11	30	280	400	120	100	670	15
131-099-34ACC	74-10-23	1600	7.3	--	100	40	28	12	670	5.0
	74-11-26	1145	13	10	20	90	24	7.0	680	5.9
131-099-348CA	75-04-29	1300	11	30	30	100	14	4.9	650	4.7
	74-10-22	1730	12	--	130	160	85	65	1500	12
	74-11-26	1520	8.7	10	30	380	25	41	1800	14
	75-04-29	1630	8.0	10	30	250	33	37	1900	12
DICKEY COUNTY										
130-059-02AAA 2	73-10-06	1600	22	--	230	750	100	39	22	16
	74-01-04	1645	23	--	60	1100	130	43	18	13
	74-03-26	1015	22	--	180	940	130	41	16	11
	74-06-25	1445	26	--	250	930	110	36	15	10
	74-09-10	1615	24	--	450	1000	120	40	15	12
	74-12-04	1355	23	--	330	820	110	40	15	12
	75-03-04	1415	18	--	30	650	100	38	15	11
	75-08-21	--	25	--	240	1100	130	46	16	13
	72-06-08	0745	23	--	20	240	67	28	4.8	2.4
	72-08-29	0845	25	--	100	160	57	24	6.9	2.1
130-059-13CCC 2	73-01-05	1110	14	--	20	120	58	23	4.7	1.6
	73-04-05	0800	14	--	9	400	59	27	5.7	2.1
	73-06-28	0820	19	--	30	240	53	22	5.3	1.3
	73-10-06	1800	23	--	90	410	62	25	8.2	2.5
	74-01-05	0800	20	--	20	360	63	26	4.5	1.6
	74-03-26	1030	17	--	50	300	65	26	5.2	2.3
	74-06-24	1600	26	--	170	100	61	24	12	2.1
	74-09-10	1650	22	--	80	140	71	30	5.7	2.0
	74-12-04	1445	19	--	340	180	65	32	5.6	2.4
	75-08-21	--	25	--	120	80	80	32	7.3	1.7
130-059-16000 2	72-06-08	0820	14	--	10	480	95	56	6.5	3.7
	72-08-29	0910	20	--	10	420	80	39	5.8	2.2
	73-01-05	1140	9.8	--	40	100	43	34	5.8	2.7
	73-04-05	0815	10	--	9	70	30	34	6.3	3.6
	73-06-28	0845	9.2	--	9	60	26	36	6.6	4.0
	73-10-06	1730	9.9	--	60	130	22	37	7.5	5.2
	74-01-05	0945	9.4	--	0	100	25	33	7.5	5.2
	74-03-26	1030	8.6	--	0	40	28	36	7.5	5.6
	74-06-25	1545	13	--	20	150	49	42	8.0	4.8
	74-09-10	1520	14	--	30	240	51	39	5.7	3.2
131-059-27888 1	74-12-04	0920	25	--	20	840	100	49	19	3.8
	71-12-08	1345	29	--	0	10	46	44	27	2.4
	72-04-04	0940	25	--	10	150	45	39	21	2.1
	72-06-08	1015	30	--	10	60	50	46	23	2.4
	72-08-29	1145	34	--	80	67	48	44	21	2.9
	73-01-05	0930	22	--	20	170	53	33	21	2.6
	73-04-05	1007	27	--	50	100	47	37	19	2.4
	73-06-28	1010	31	--	20	100	52	39	15	2.3
	73-10-06	1300	34	--	30	300	54	38	21	3.4
	74-01-04	1930	26	--	20	240	53	37	18	2.7
131-059-2800A 1	74-03-26	0930	26	--	30	140	46	33	16	2.5

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS GROUND-WATER QUALITY SITES

LOCAL IDENT- IFIER	DATE OF SAMPLE	RICAR- BONATE (MCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	ALKA- LINITY AS CACO3 (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	BROMIDE (BR) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)
BOTTINEAU COUNTY										
159-081-11888	73-04-03	247	0	203	73	4.5	.4	--	--	--
	73-06-26	280	0	230	54	4.4	.4	--	--	--
	73-10-01	317	0	260	35	6.2	.3	--	--	--
	74-01-14	226	14	209	45	1.6	.2	--	--	--
	74-07-24	235	0	193	40	3.0	.2	--	--	--
	74-09-12	285	--	234	28	2.4	.3	--	--	--
	74-12-14	268	7	231	26	1.6	.2	--	--	--
	75-03-20	255	0	209	34	1.6	.3	--	--	--
	75-06-26	291	0	239	29	1.9	.3	--	--	--
	75-09-10	316	0	259	24	1.0	.3	--	--	--
BOWMAN COUNTY										
131-099-21000	74-05-17	--	--	--	--	--	--	--	--	--
	74-08-28	670	0	550	600	8.5	2.7	--	--	--
	74-11-21	671	4	557	550	13	1.9	--	--	--
	74-11-21	671	0	550	560	58	1.9	--	--	--
	75-05-01	659	11	559	510	37	2.4	.2	--	--
131-099-22CCR	74-04-25	788	98	809	98	66	5.2	--	--	--
	74-11-25	914	72	870	350	68	3.9	--	--	--
	75-05-01	847	41	763	750	17	3.8	.3	--	--
131-099-29888	74-05-01	665	32	599	290	8.6	1.3	--	--	--
	74-11-22	689	22	602	260	51	.9	--	--	--
131-099-33CCC	75-05-01	678	30	606	290	31	1.3	.0	--	--
	74-04-30	629	--	516	1600	8.0	.4	--	--	--
	74-11-20	655	--	537	1500	6.0	.2	--	--	--
131-099-34ACC	75-04-28	631	0	518	1600	6.3	.2	.0	--	--
	74-10-23	630	24	557	1000	7.2	2.5	--	.23	--
131-099-348CA	74-11-26	645	20	562	910	11	2.0	--	--	--
	75-04-29	680	0	558	870	11	2.1	.1	--	--
	74-10-22	550	0	451	3100	6.8	1.0	--	.23	--
	74-11-26	570	0	468	3500	9.1	.7	--	--	--
	75-04-29	567	0	465	3700	9.3	.7	.1	--	--
DICKEY COUNTY										
130-059-02AAA2	73-10-06	468	0	384	93	8.0	.1	--	--	--
	74-01-04	583	0	478	80	6.5	.2	--	--	--
	74-03-26	546	0	448	110	5.5	.3	--	--	--
	74-06-25	429	0	352	97	7.0	.1	--	--	--
	74-09-10	458	--	376	91	7.5	.1	--	--	--
	74-12-04	521	--	427	77	5.5	.1	--	--	--
	75-03-04	438	0	359	73	4.4	.1	--	--	--
	75-08-21	487	0	399	170	11	.2	--	--	--
	72-06-08	332	0	272	18	4.8	.5	--	.92	.08
	72-08-29	296	0	243	16	6.0	.6	--	1.2	.02
	73-01-05	286	0	235	12	5.6	.5	--	--	--
	73-04-05	302	0	248	20	3.7	.4	--	--	--
130-059-13CCC2	73-06-28	269	0	221	20	3.1	.5	--	--	--
	73-10-06	305	0	250	11	3.0	.5	--	--	--
	74-01-05	299	0	245	13	2.3	.5	--	--	--
	74-03-26	323	0	265	12	2.2	.5	--	--	--
	74-06-24	291	0	239	9.6	4.1	.4	--	--	--
	74-09-10	340	--	279	11	3.6	.4	--	--	--
	74-12-04	333	--	273	13	2.3	.4	--	--	--
	75-08-21	319	0	262	21	2.3	.4	--	--	--
	72-06-08	272	0	223	260	1.7	.3	--	.91	.01
	72-08-29	318	0	261	120	5.7	.5	--	.76	.01
	73-01-05	257	16	237	29	2.6	.3	--	--	--
	73-04-05	246	0	202	23	2.1	.2	--	--	--
130-059-160002	73-06-28	245	0	201	22	2.9	.2	--	--	--
	73-10-06	252	5	215	16	2.1	.2	--	--	--
	74-01-05	260	6	223	17	2.4	.2	--	--	--
	74-03-26	248	7	215	21	2.7	.2	--	--	--
	74-06-25	288	1	238	58	3.6	.2	--	--	--
	74-09-10	293	--	240	50	3.6	.2	--	--	--
	74-12-04	242	--	198	24	2.4	.2	--	--	--
	75-03-04	207	4	176	35	1.7	.1	--	--	--
	75-08-21	354	0	290	110	4.5	.3	--	--	--
	74-12-04	388	--	318	96	4.4	.4	--	--	--
131-059-278881	71-12-08	348	0	285	45	6.4	.8	--	3.9	.00
	72-04-04	340	0	279	29	6.1	.4	--	4.1	.01
	72-06-08	344	0	282	30	11	.6	--	15	.01
	72-08-29	346	0	284	35	6.0	.5	--	4.9	.02
	73-01-05	332	0	272	32	4.5	.8	--	--	--
	73-04-05	323	0	265	24	6.7	.6	--	--	--
	73-06-28	314	0	258	26	5.6	.6	--	--	--
	73-10-06	337	0	276	17	3.8	.5	--	--	--
	74-01-04	351	5	296	18	3.4	.4	--	--	--
	74-03-26	305	0	250	18	4.1	.4	--	--	--

LOCAL IDENT- I- FIER	DATE OF SAMPLE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
BOTTINEAU COUNTY										
159-081-11888	73-04-03	--	.12	--	--	--	--	--	.01	.00
	73-06-26	--	.08	--	--	--	--	--	.00	.00
	73-10-01	--	.05	--	--	--	--	--	.08	.07
	74-01-14	--	.07	--	--	--	--	--	.01	.01
	74-07-24	--	.25	--	--	--	--	--	.04	.04
	74-09-12	--	.45	--	--	--	--	--	.02	.01
	74-12-14	--	.01	--	--	--	--	--	.01	.01
	75-03-20	--	.03	--	--	--	--	--	.00	.01
	75-06-26	--	.01	--	--	--	--	--	.01	.00
	75-09-10	--	.05	--	--	--	--	--	.02	.03
BOWMAN COUNTY										
131-099-21000	74-05-17	--	--	--	--	--	--	--	--	--
	74-08-28	--	--	--	--	--	--	--	--	--
	74-11-21	--	--	--	--	--	--	--	--	--
	74-11-21	--	--	--	--	--	--	--	--	--
	75-05-01	.85	--	.02	1.2	1.2	2.1	.02	--	.02
131-099-22CC8	74-04-25	--	--	--	--	--	--	--	1.6	--
	74-11-25	--	--	--	--	--	--	--	--	--
	75-05-01	.71	--	.98	--	.93	1.6	.52	--	.50
131-099-29888	74-05-01	--	.09	--	--	--	--	--	1.9	--
	74-11-22	--	--	--	--	--	--	--	--	--
131-099-33CCC	75-05-01	1.0	--	.00	.64	.64	1.6	1.1	--	1.2
	74-04-30	--	.17	--	--	--	--	--	.34	--
	74-11-20	--	--	--	--	--	--	--	--	--
	75-04-28	.02	--	1.5	1.0	2.5	2.5	.00	--	.02
131-099-34ACC	74-10-23	--	--	--	--	--	--	--	--	--
	74-11-26	--	--	--	--	--	--	--	--	--
131-099-348CA	75-04-29	.03	--	.37	1.0	1.4	1.4	.19	--	.14
	74-10-22	--	--	--	--	--	--	--	--	--
	74-11-26	--	--	--	--	--	--	--	--	--
	75-04-29	.01	--	2.4	.00	2.4	2.4	.08	--	.05
DICKEY COUNTY										
130-059-02AAA 2	73-10-06	--	.08	--	--	--	--	--	.04	.07
	74-01-04	--	.25	--	--	--	--	--	.03	.03
	74-03-26	--	.14	--	--	--	--	--	.03	.03
	74-06-25	--	.18	--	--	--	--	--	.01	.01
	74-09-10	--	.10	--	--	--	--	--	.01	.01
	74-12-04	--	.08	--	--	--	--	--	.00	.00
	75-03-04	--	.02	--	--	--	--	--	.02	.03
	75-08-21	--	.03	--	--	--	--	--	.00	.01
	72-06-08	--	1.0	--	--	--	--	--	.01	.00
	72-08-29	--	1.2	--	--	--	--	--	.02	.01
	73-01-05	--	1.0	--	--	--	--	--	.02	.01
	73-04-05	--	.89	--	--	--	--	--	.01	.01
	73-06-28	--	.68	--	--	--	--	--	.00	.01
	73-10-06	--	4.6	--	--	--	--	--	.04	.07
130-059-13CCC2	74-01-05	--	3.5	--	--	--	--	--	.01	.00
	74-03-26	--	2.5	--	--	--	--	--	.02	.02
	74-06-24	--	6.8	--	--	--	--	--	.01	.01
	74-09-10	--	8.6	--	--	--	--	--	.03	.02
	74-12-04	--	7.5	--	--	--	--	--	.00	.00
	75-08-21	--	17	--	--	--	--	--	.04	.01
	72-06-08	--	.92	--	--	--	--	--	.01	.00
	72-08-29	--	.77	--	--	--	--	--	.04	.00
	73-01-05	--	.70	--	--	--	--	--	.03	.01
	73-04-05	--	.68	--	--	--	--	--	.01	.01
	73-06-28	--	.49	--	--	--	--	--	.00	.00
	73-10-06	--	.56	--	--	--	--	--	.02	.03
	74-01-05	--	1.4	--	--	--	--	--	.01	.00
	74-03-26	--	.51	--	--	--	--	--	.14	.11
131-059-278881	74-06-25	--	.74	--	--	--	--	--	.01	.01
	74-09-10	--	1.8	--	--	--	--	--	.01	.01
	74-12-04	--	2.2	--	--	--	--	--	.00	.00
	75-03-04	--	1.7	--	--	--	--	--	.01	.00
	75-08-21	--	.31	--	--	--	--	--	.05	.01
	74-12-04	--	4.1	--	--	--	--	--	.00	.02
131-059-2800A1	71-12-08	--	3.9	--	--	--	--	--	.02	.01
	72-04-04	--	4.1	--	--	--	--	--	.02	.01
	72-06-08	--	15	--	--	--	--	--	.02	.01
	72-08-29	--	4.9	--	--	--	--	--	.03	.02
	73-01-05	--	3.5	--	--	--	--	--	.02	.00
	73-04-05	--	4.8	--	--	--	--	--	.02	.02
	73-06-28	--	9.6	--	--	--	--	--	.01	.02
	73-10-06	--	8.3	--	--	--	--	--	.07	.10
	74-01-04	--	4.0	--	--	--	--	--	.02	.02
	74-03-26	--	6.1	--	--	--	--	--	.03	.03

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS GROUND-WATER QUALITY SITES

LOCAL IDENT- IFIER	DATE OF SAMPLE	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)
BOTTINEAU COUNTY										
159-081-1188B	73-04-03	--	310	230	24	15	.5	527	7.4	5.5
	73-06-26	--	311	240	6	15	.5	521	7.6	10.5
	73-10-01	--	325	260	1	13	.5	565	7.5	15.0
	74-01-14	--	267	220	7	15	.5	420	8.8	4.0
	74-07-24	--	247	190	0	17	.6	404	8.8	--
	74-09-12	--	276	230	0	14	.5	482	8.2	--
	74-12-14	--	265	220	0	14	.5	440	8.7	--
	75-03-20	--	251	210	0	16	.5	360	8.5	6.5
	75-06-26	--	280	240	3	11	.4	485	8.1	8.5
	75-09-10	--	298	260	3	10	.4	515	8.0	10.5
BOWMAN COUNTY										
131-099-21000	74-05-17	--	--	--	--	--	--	--	--	8.5
	74-08-28	1700	1490	65	0	93	28	--	--	--
	74-11-21	1490	1420	35	0	96	37	2350	8.4	8.5
	74-11-21	1490	1470	33	0	97	38	2350	8.5	8.5
	75-05-01	1480	1440	26	0	97	45	2390	8.8	7.5
131-099-22CCB	74-04-25	1440	--	92	0	91	20	1860	8.7	9.5
	74-11-25	1520	1510	130	0	89	19	2340	9.0	5.0
	75-05-01	2070	1950	330	0	80	15	3100	8.7	7.5
131-099-2988B	74-05-01	1080	1070	35	0	95	28	1620	8.5	9.8
	74-11-22	1100	1100	25	0	97	35	1800	8.8	8.5
131-099-33CCC	75-05-01	1100	1130	130	0	86	15	1900	9.0	9.5
	74-04-30	2940	2810	740	220	64	10	3730	7.4	8.8
	74-11-20	2980	2760	740	200	66	11	3800	7.8	7.0
	75-04-28	2940	2850	720	200	67	11	3900	7.8	7.5
131-099-34ACC	74-10-23	2150	2070	120	0	92	27	3110	8.5	14.0
	74-11-26	2040	1990	89	0	94	31	3100	8.6	7.0
131-099-34BCA	75-04-29	1970	1910	56	0	96	38	3100	8.8	6.5
	74-10-22	5130	5060	480	29	87	30	6790	8.2	11.0
	74-11-26	6020	5680	230	0	94	52	8100	8.4	5.0
	75-04-29	6070	5980	240	0	94	54	8200	8.5	8.0
DICKEY COUNTY										
130-059-02AAA2	73-10-06	--	532	410	26	10	.5	845	7.2	13.5
	74-01-04	--	603	500	23	7	.4	990	7.3	5.0
	74-03-26	--	607	490	46	6	.3	967	7.4	5.0
	74-06-25	--	515	420	71	7	.3	832	7.4	9.5
	74-09-10	--	537	460	89	6	.3	847	7.2	--
	74-12-04	--	541	440	12	7	.3	950	--	8.5
	75-03-04	--	476	410	47	7	.3	575	7.6	7.5
	75-08-21	--	653	510	110	6	.3	1025	7.2	9.0
	72-06-08	--	321	280	10	4	.1	540	7.5	12.0
	72-08-29	--	294	240	0	6	.2	493	7.2	8.0
130-059-13CCC2	73-01-05	--	265	240	5	4	.1	454	7.9	--
	73-04-05	--	285	260	11	5	.2	508	8.0	5.5
	73-06-28	--	260	220	2	5	.2	455	7.6	9.0
	73-10-06	--	307	260	8	6	.2	499	7.6	13.0
	74-01-05	--	294	260	19	4	.1	524	7.5	5.0
	74-03-26	--	301	270	4	4	.1	520	7.7	5.0
	74-06-24	--	313	250	12	9	.3	511	7.5	11.5
	74-09-10	--	352	300	22	4	.1	600	7.6	--
	74-12-04	--	338	290	21	4	.1	610	--	9.5
	75-08-21	--	402	330	70	5	.2	640	7.7	9.0
130-059-160002	72-06-08	--	580	470	240	3	.1	882	7.6	11.5
	72-08-29	--	437	360	99	3	.1	686	7.6	7.0
	73-01-05	--	273	250	10	5	.2	447	8.6	--
	73-04-05	--	234	220	13	6	.2	382	7.5	6.0
	73-06-28	--	230	210	12	6	.2	402	8.3	8.5
	73-10-06	--	232	210	0	7	.2	407	8.4	12.0
	74-01-05	--	245	220	0	7	.2	429	8.5	6.0
	74-03-26	--	242	220	3	7	.2	431	8.5	6.0
	74-06-25	--	325	300	57	5	.2	551	8.4	10.5
	74-09-10	--	319	290	48	4	.1	517	7.7	--
131-059-2788B1	74-12-04	--	242	220	25	5	.2	430	6.8	9.0
	75-03-04	--	229	210	32	7	.2	380	8.5	7.5
	75-08-21	--	455	390	100	4	.2	725	7.6	9.0
	74-12-04	--	548	450	130	8	.4	730	7.1	7.0
131-059-2800A1	71-12-08	--	389	300	11	16	.7	612	7.5	8.0
	72-04-04	--	371	270	0	14	.6	580	7.6	4.0
	72-06-08	--	495	310	32	14	.6	699	7.6	12.0
	72-08-29	--	405	300	17	13	.5	627	7.7	7.0
	73-01-05	--	348	270	0	14	.6	568	7.6	--
	73-04-05	--	344	270	5	13	.5	577	7.7	4.5
	73-06-28	--	369	290	33	10	.4	587	8.1	4.5
	73-10-06	--	375	290	15	13	.5	588	7.6	11.0
	74-01-04	--	355	280	0	12	.5	593	8.4	4.5
	74-03-26	--	324	250	1	12	.4	536	7.9	4.0

LOCAL IDENT- IFIER	DATE OF SAMPLE	DIS- SOL- VED ORGANIC CARBON (C) (MG/L)	SUS- PEN- DED ORGANIC CARBON (C) (MG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BERYL- LIUM (BE) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)
BOWMAN COUNTY										
131-099-210DD	74-05-17	--	--	--	--	0	1100	2	0	6
	74-08-28	--	--	--	--	--	--	--	--	--
	74-11-21	17	>4.0	0	--	<10	--	2	<10	10
	74-11-21	9.7	1.7	1	--	<10	--	1	<10	10
	75-05-01	23	.8	1	0	0	1100	1	0	4
131-099-22CCB	74-04-25	--	--	--	--	--	--	--	--	--
	74-11-25	38	6.0	5	--	<10	--	2	<10	7
	75-05-01	23	1.3	2	0	0	1300	1	0	3
	74-05-01	--	--	--	--	--	--	--	--	--
131-099-298BB	74-11-22	19	--	3	--	<10	--	1	<10	7
	75-05-01	16	.3	3	0	0	230	1	0	14
131-099-33CCC	74-04-30	--	--	--	--	--	--	--	--	--
	74-11-20	20	.5	0	--	<10	--	1	<10	2
	75-04-28	40	.6	0	0	0	7200	1	0	8
131-099-34ACC	74-10-23	--	--	--	--	--	1100	--	--	--
	74-11-26	16	1.6	10	--	<10	1000	1	<10	7
131-099-34BCA	75-04-29	19	.2	6	0	0	1200	0	0	20
	74-10-22	--	--	--	--	--	1900	--	--	--
	74-11-26	25	.4	4	--	<10	1600	1	<10	2
	75-04-29	26	.7	1	0	0	1700	0	0	5

LOCAL IDENT- IFIER	DATE OF SAMPLE	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED LITHIUM (LI) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENIUM (MO) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)
BOWMAN COUNTY							
131-099-210DD	74-05-17	12	30	.0	0	4	1
	74-08-28	--	--	--	--	--	--
	74-11-21	4	10	<.1	0	4	0
	74-11-21	8	20	<.1	1	9	0
	75-05-01	0	30	.1	0	1	0
131-099-22CCB	74-04-25	--	--	--	--	--	--
	74-11-25	12	30	.4	3	1	0
	75-05-01	6	50	.0	6	4	0
	74-05-01	--	--	--	--	--	--
131-099-298BB	74-11-22	11	10	.1	4	10	0
	75-05-01	5	20	.0	2	3	0
131-099-33CCC	74-04-30	--	--	--	--	--	--
	74-11-20	1	230	<.1	0	3	0
	75-04-28	2	230	.0	0	1	0
131-099-34ACC	74-10-23	--	--	--	--	--	--
	74-11-26	7	30	<.1	19	2	0
131-099-34BCA	75-04-29	9	40	.2	22	0	0
	74-10-22	--	--	--	--	--	--
	74-11-26	1	110	.3	1	2	0
	75-04-29	2	120	.2	0	0	0

LOCAL IDENT- IFIER	DATE OF SAMPLE	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED STRON- TIUM (SR) (UG/L)	DIS- SOLVED VANA- DIUM (V) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
BOWMAN COUNTY					
131-099-210DD	74-05-17	0	--	4.0	220
	74-08-28	--	--	--	--
	74-11-21	--	--	--	30
	74-11-21	--	--	--	40
	75-05-01	--	220	14	20
131-099-22CCB	74-04-25	--	--	--	--
	74-11-25	--	--	--	450
	75-05-01	--	1400	24	270
131-099-298BB	74-05-01	--	--	--	--
	74-11-22	--	--	--	290
131-099-33CCC	75-05-01	--	90	26	80
	74-04-30	--	--	--	--
	74-11-20	--	--	.0	750
	75-04-28	--	4400	1.6	70
131-099-34ACC	74-10-23	--	--	--	--
	74-11-26	--	--	5.2	620
131-099-34BCA	75-04-29	--	320	3.7	320
	74-10-22	--	--	--	--
	74-11-26	--	--	1.5	1400
	75-04-29	--	2300	.0	440

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS GROUND-WATER QUALITY SITES

LOCAL IDENT- IFIER	DATE OF SAMPLE	TIME	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
DICKEY COUNTY										
131-059-280DA1	74-06-25	1100	32	--	40	80	47	35	18	2.8
	74-09-10	1420	34	--	40	180	48	34	17	2.9
	74-12-04	1030	29	--	90	200	48	35	16	2.4
	75-03-04	1515	26	--	50	290	50	37	16	2.9
131-059-33ADN1	73-10-06	1430	23	--	40	60	66	30	24	4.7
	73-10-30	0825	23	--	40	1	70	27	23	4.6
	73-11-27	0900	23	--	10	70	67	27	23	4.2
	74-01-04	1600	22	--	10	80	68	26	25	4.2
	74-01-29	0900	19	--	150	80	70	27	24	5.0
	74-02-26	1230	18	--	40	60	65	27	24	5.4
	74-03-26	1000	18	--	10	60	69	29	24	6.1
	74-05-29	1300	14	--	20	110	65	30	24	5.4
	74-06-25	1345	18	--	40	250	72	32	25	5.7
	74-07-30	1300	17	--	30	150	67	30	25	4.8
	74-08-27	1530	17	--	120	180	71	31	27	5.3
	74-09-10	1540	20	--	30	160	76	29	27	5.3
	74-10-30	1200	22	--	20	170	68	27	26	4.9
	74-12-04	1310	18	--	10	380	72	29	26	5.3
	75-01-09	1000	18	--	10	230	71	28	27	5.6
	75-01-30	1230	19	--	50	150	71	28	28	5.8
131-059-348BC1	71-12-09	1125	19	--	10	550	41	36	20	3.5
	72-04-04	1530	18	--	10	90	40	36	13	2.4
	72-06-08	0950	20	--	10	240	34	31	15	3.0
	72-08-29	1105	23	--	20	300	35	34	15	3.2
	73-01-05	0945	10	--	20	420	40	41	13	2.7
	73-04-05	0935	19	--	20	170	41	39	14	2.6
	73-06-28	0945	22	--	30	290	42	46	15	3.1
	73-10-06	1400	25	--	40	630	53	48	18	5.4
	74-01-04	1500	24	--	10	500	52	49	22	4.6
	74-03-26	0945	21	--	10	530	54	48	23	4.9
	74-06-25	1300	27	--	40	460	49	48	23	4.6
	74-09-10	1515	23	--	30	600	49	55	24	4.6
	74-12-04	1205	22	--	40	520	48	48	23	4.5
	75-03-04	1445	20	--	20	640	49	46	23	4.7
	75-08-21	--	26	--	50	40	51	29	57	7.0
MC HENRY COUNTY										
156-079-11CCC	74-12-03	1215	15	--	40	500	150	90	36	3.7
156-079-168BB	73-04-03	1500	12	--	30	710	66	43	31	6.4
	73-06-26	1410	12	--	60	630	56	42	30	6.9
	73-10-02	1200	9.8	--	40	380	55	43	34	7.3
	74-01-16	0925	11	--	40	70	36	62	43	8.0
	74-03-27	1200	12	--	50	150	51	63	41	8.2
	74-07-23	1400	11	--	50	120	48	58	44	7.9
	74-09-13	1205	18	--	40	50	32	52	37	7.9
	74-12-03	1030	7.7	--	20	60	21	45	33	6.7
	75-03-20	1045	12	--	30	70	36	50	31	5.9
	75-06-26	1525	18	--	430	710	110	40	32	5.9
	75-09-10	2105	20	--	280	740	110	48	31	5.7
157-078-19CCC	73-04-03	1415	8.9	--	460	800	44	27	24	3.1
	73-06-26	1220	9.0	--	300	790	44	29	26	3.5
	74-03-27	1410	3.1	--	80	50	19	37	28	5.2
	74-09-13	1105	3.6	--	50	80	25	34	26	5.4
	74-12-03	1440	4.3	--	10	40	21	44	30	5.4
	75-03-20	1135	5.3	--	60	110	27	59	32	5.5
158-079-028BB	75-06-26	1410	11	--	140	1000	130	50	34	5.2
	75-09-10	2015	15	--	180	1100	140	59	30	4.7
	74-12-04	1010	19	--	40	110	430	800	390	5.5
	73-04-03	1240	3.1	--	9	0	8.3	32	27	5.3
	73-06-26	1320	2.7	--	9	30	13	33	26	5.4
	73-10-02	1525	14	--	30	150	38	36	17	4.1
	74-01-15	1145	5.6	--	10	20	6.9	41	14	4.4
	74-03-27	1710	4.3	--	10	20	5.4	43	14	4.4
	74-07-23	1700	2.7	--	50	0	7.5	38	17	4.7
	74-09-12	1515	2.5	--	30	10	6.3	44	14	5.0
158-079-22AAA	74-12-03	1645	5.9	--	10	10	4.6	41	14	4.3
	75-03-20	1250	3.6	--	10	10	5.0	46	15	4.3
	75-06-26	1210	5.4	--	20	10	10	37	15	4.4
	75-09-10	1930	12	--	10	30	22	39	13	3.7
158-079-24AAB	73-04-03	1305	13	--	20	450	67	19	9.3	2.4
	73-06-26	1340	14	--	270	470	69	19	7.8	2.2
	73-10-02	1545	16	--	40	340	71	20	7.5	2.1
	74-01-15	1415	14	--	10	170	69	22	7.6	2.3
	74-03-27	1800	13	--	20	140	66	21	6.8	2.3
	74-09-12	1545	9.5	--	240	140	31	16	7.6	2.7
	74-12-03	1720	11	--	10	70	39	22	6.8	2.4
	75-03-20	1320	9.7	--	10	20	31	25	7.5	2.6
	75-06-26	1310	7.1	--	10	40	32	16	8.0	2.9
	75-09-10	1850	15	--	20	90	58	21	7.0	2.4

LOCAL IDENT- IFIER	DATE OF SAMPLE	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	BROMIDE (BR) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)
DICKEY COUNTY										
131-059-28DDA1	74-06-25	294	0	244	14	4.1	.4	--	--	--
	74-09-10	314	--	258	13	4.9	.4	--	--	--
	74-12-04	320	--	262	13	3.6	.4	--	--	--
	75-03-04	328	0	269	15	2.4	.4	--	--	--
131-059-33ADD1	73-10-06	362	0	297	28	3.7	.8	--	--	--
	73-10-30	369	0	303	29	3.8	.8	--	--	--
	73-11-27	362	0	297	26	3.3	.9	--	--	--
	74-01-04	359	0	294	36	4.5	.9	--	--	--
	74-01-29	357	0	293	40	4.4	.7	--	--	--
	74-02-26	347	0	285	43	4.0	.7	--	--	--
	74-03-26	360	0	295	48	4.9	.7	--	--	--
	74-05-29	343	0	281	60	4.8	.5	--	--	--
	74-06-25	357	0	293	63	6.7	.5	--	--	--
	74-07-30	353	0	290	49	4.5	.7	--	--	--
	74-08-27	358	--	294	58	5.0	.7	--	--	--
	74-09-10	365	--	299	57	5.6	.7	--	--	--
	74-10-30	353	--	290	37	3.8	.8	--	--	--
	74-12-04	379	--	311	46	4.7	.7	--	--	--
	75-01-09	362	--	297	50	5.7	.6	--	--	--
	75-01-30	368	--	302	54	5.9	.5	--	--	--
131-059-3488C1	71-12-09	288	0	236	43	5.1	.4	--	9.3	1.7
	72-04-04	313	0	257	10	3.2	.5	--	3.7	.11
	72-06-08	298	0	244	10	1.3	.5	--	1.5	.08
	72-08-29	294	0	241	12	2.3	.7	--	4.3	.07
	73-01-05	303	0	249	14	1.8	.7	--	--	--
	73-04-05	307	0	252	18	3.1	.5	--	--	--
	73-06-28	325	0	267	21	3.1	.5	--	--	--
	73-10-06	335	0	275	35	3.4	.4	--	--	--
	74-01-04	356	0	292	42	3.8	.4	--	--	--
	74-03-26	391	0	321	46	4.5	.5	--	--	--
	74-06-25	348	0	285	43	7.7	.4	--	--	--
	74-09-10	386	--	317	46	5.1	.4	--	--	--
	74-12-04	385	--	316	41	4.3	.4	--	--	--
	75-03-04	367	0	301	42	3.5	.3	--	--	--
	75-08-21	404	0	331	46	8.8	.9	--	--	--
MC HENRY COUNTY										
156-079-11CCC	74-12-03	676	--	554	250	4.4	.1	--	--	--
156-079-16BBB	73-04-03	390	0	320	88	7.4	.2	--	--	--
	73-06-26	354	0	290	89	7.8	.3	--	--	--
	73-10-02	367	0	301	86	7.0	.1	--	--	--
	74-01-16	293	14	264	170	12	.1	--	--	--
	74-03-27	358	0	294	170	12	.3	--	--	--
	74-07-23	360	0	295	160	13	.1	--	--	--
	74-09-13	355	--	291	88	10	.1	--	--	--
	74-12-03	274	25	266	50	7.0	.1	--	--	--
	75-03-20	346	0	284	63	7.6	.3	--	--	--
	75-06-26	471	0	386	130	11	.2	--	--	--
	75-09-10	488	0	400	120	12	.3	--	--	--
157-078-19CCC	73-04-03	207	0	170	86	7.5	.3	--	--	--
	73-06-26	237	0	194	86	8.1	.3	--	--	--
	74-03-27	201	19	197	53	6.2	.3	--	--	--
	74-09-13	234	6	202	53	6.9	.1	--	--	--
	74-12-03	244	25	242	53	5.0	.1	--	--	--
	75-03-20	335	3	280	89	5.0	.2	--	--	--
	75-06-26	477	0	391	270	5.6	.1	--	--	--
	75-09-10	535	0	439	220	6.6	.2	--	--	--
158-079-02BBB	74-12-04	542	--	445	4500	66	.8	--	--	--
158-079-22AAA	73-04-03	43	86	178	58	4.2	.1	--	--	--
	73-06-26	49	73	162	32	3.3	.2	--	--	--
	73-10-02	291	1	240	49	2.5	.1	--	--	--
	74-01-15	164	33	189	34	2.0	.1	--	--	--
	74-03-27	124	52	188	36	2.4	.2	--	--	--
	74-07-23	136	27	157	48	4.0	.1	--	--	--
	74-09-12	112	56	185	35	4.1	.1	--	--	--
	74-12-03	146	48	200	19	1.6	.1	--	--	--
	75-03-20	162	44	206	18	1.6	.2	--	--	--
	75-06-26	134	50	193	23	2.3	.1	--	--	--
	75-09-10	232	12	210	27	2.2	.2	--	--	--
158-079-24AAB	73-04-03	260	0	213	51	3.2	.3	--	--	--
	73-06-26	284	0	233	40	3.4	.3	--	--	--
	73-10-02	309	0	253	21	2.1	.1	--	--	--
	74-01-15	288	8	250	21	1.3	.2	--	--	--
	74-03-27	301	0	247	21	1.3	.2	--	--	--
	74-09-12	181	--	148	12	2.3	.1	--	--	--
	74-12-03	239	1	198	5.8	1.5	.1	--	--	--
	75-03-20	224	0	184	11	1.3	.2	--	--	--
	75-06-26	192	7	169	12	1.6	.1	--	--	--
	75-09-10	280	0	230	9.9	1.7	.1	--	--	--

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS GROUND-WATER QUALITY SITES

LOCAL IDENT- IFIER	DATE OF SAMPLE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED OR THO. PHOS- PHORUS (P) (MG/L)
DICKEY COUNTY										
131-059-28DDA1	74-06-25	--	8.8	--	--	--	--	--	.02	.03
	74-09-10	--	6.4	--	--	--	--	--	.06	.03
	74-12-04	--	6.5	--	--	--	--	--	.00	.03
	75-03-04	--	5.0	--	--	--	--	--	.03	.03
131-059-33ADD1	73-10-06	--	3.4	--	--	--	--	--	.03	.07
	73-10-30	--	2.4	--	--	--	--	--	.18	.08
	73-11-27	--	2.1	--	--	--	--	--	.05	.03
	74-01-04	--	1.5	--	--	--	--	--	.03	.03
	74-01-29	--	.95	--	--	--	--	--	.01	.01
	74-02-26	--	.78	--	--	--	--	--	.01	.01
	74-03-26	--	1.3	--	--	--	--	--	.16	.08
	74-05-29	--	.69	--	--	--	--	--	.08	.01
	74-06-25	--	.77	--	--	--	--	--	.01	.01
	74-07-30	--	1.5	--	--	--	--	--	.03	.03
	74-08-27	--	1.5	--	--	--	--	--	.02	.01
	74-09-10	--	2.4	--	--	--	--	--	.01	.01
	74-10-30	--	2.5	--	--	--	--	--	.00	.03
	74-12-04	--	.97	--	--	--	--	--	.00	.01
	75-01-09	--	.49	--	--	--	--	--	.05	.02
	75-01-30	--	.61	--	--	--	--	--	3.4	3.5
131-059-3488C1	71-12-09	--	11	--	--	--	--	--	.02	.00
	72-04-04	--	3.9	--	--	--	--	--	.02	.00
	72-06-08	--	1.6	--	--	--	--	--	.01	.00
	72-08-29	--	4.4	--	--	--	--	--	.02	.01
	73-01-05	--	7.8	--	--	--	--	--	.04	.00
	73-04-05	--	7.0	--	--	--	--	--	.01	.01
	73-06-28	--	12	--	--	--	--	--	.00	.01
	73-10-06	--	19	--	--	--	--	--	.05	.08
	74-01-04	--	15	--	--	--	--	--	.02	.02
	74-03-26	--	7.1	--	--	--	--	--	.06	.05
	74-06-25	--	6.9	--	--	--	--	--	.01	.02
	74-09-10	--	9.9	--	--	--	--	--	.05	.01
	74-12-04	--	6.2	--	--	--	--	--	.00	.02
	75-03-04	--	6.4	--	--	--	--	--	.01	.02
	75-08-21	--	.47	--	--	--	--	--	.03	.02
MC HENRY COUNTY										
156-079-11CCC	74-12-03	--	.33	--	--	--	--	--	.01	.01
156-079-168BB	73-04-03	--	.11	--	--	--	--	--	.00	.00
	73-06-26	--	.00	--	--	--	--	--	.00	.01
	73-10-02	--	.01	--	--	--	--	--	.04	.05
	74-01-16	--	.08	--	--	--	--	--	.01	.01
	74-03-27	--	.07	--	--	--	--	--	.01	.01
	74-07-23	--	.08	--	--	--	--	--	.04	.04
	74-09-13	--	.23	--	--	--	--	--	.03	.00
	74-12-03	--	.00	--	--	--	--	--	.01	.01
	75-03-20	--	.03	--	--	--	--	--	.01	.01
	75-06-26	--	.05	--	--	--	--	--	.01	.01
	75-09-10	--	.02	--	--	--	--	--	.02	.01
	75-09-10	--	.02	--	--	--	--	--	.02	.01
157-078-19CCC	73-04-03	--	.04	--	--	--	--	--	.01	.00
	73-06-26	--	.09	--	--	--	--	--	.00	.00
	74-03-27	--	.20	--	--	--	--	--	.01	.00
	74-09-13	--	.12	--	--	--	--	--	.03	.01
	74-12-03	--	.10	--	--	--	--	--	.01	.00
	75-03-20	--	.16	--	--	--	--	--	.00	.01
	75-06-26	--	.02	--	--	--	--	--	.01	.00
	75-09-10	--	.02	--	--	--	--	--	.02	.02
158-079-0288B	74-12-04	--	.09	--	--	--	--	--	.03	.04
	73-04-03	--	.12	--	--	--	--	--	.01	--
158-079-22AAA	73-06-26	--	.04	--	--	--	--	--	.01	.00
	73-10-02	--	.02	--	--	--	--	--	.06	.06
	74-01-15	--	.23	--	--	--	--	--	.01	.01
	74-03-27	--	.18	--	--	--	--	--	.01	.01
	74-07-23	--	.19	--	--	--	--	--	.03	.03
	74-09-12	--	.02	--	--	--	--	--	.01	.01
	74-12-03	--	.03	--	--	--	--	--	.02	.02
	75-03-20	--	.03	--	--	--	--	--	.00	.01
	75-06-26	--	.03	--	--	--	--	--	.01	.01
	75-09-10	--	.02	--	--	--	--	--	.02	.01
158-079-24AAB	73-04-03	--	.04	--	--	--	--	--	.00	.01
	73-06-26	--	.01	--	--	--	--	--	.02	.01
	73-10-02	--	.03	--	--	--	--	--	.08	.03
	74-01-15	--	.06	--	--	--	--	--	.00	.01
	74-03-27	--	.24	--	--	--	--	--	.01	.02
	74-09-12	--	.05	--	--	--	--	--	.03	.00
	74-12-03	--	.00	--	--	--	--	--	.00	.01
	75-03-20	--	.02	--	--	--	--	--	.00	.01
	75-06-26	--	.01	--	--	--	--	--	.01	.00
	75-09-10	--	.04	--	--	--	--	--	.01	.03

LOCAL IDENT- I- FIER	DATE OF SAMPLE	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)
DICKEY COUNTY										
131-059-28DDA1	74-06-25	--	339	260	17	13	.5	546	8.0	11.0
	74-09-10	--	338	260	2	12	.5	550	7.9	--
	74-12-04	--	334	260	1	12	.4	540	--	--
	75-03-04	--	334	280	8	11	.4	380	8.0	8.0
131-059-33ADD1	73-10-06	--	374	290	0	15	.6	600	7.9	11.5
	73-10-30	--	374	290	0	15	.6	612	7.9	10.5
	73-11-27	--	362	280	0	15	.6	601	8.0	10.0
	74-01-04	--	370	280	0	16	.7	610	8.0	6.5
	74-01-29	--	371	290	0	15	.6	615	8.1	8.0
	74-02-26	--	362	270	0	16	.6	680	8.1	8.0
	74-03-26	--	383	290	0	15	.6	626	8.2	7.0
	74-05-29	--	376	290	4	15	.6	629	8.1	--
	74-06-25	--	403	310	19	15	.6	668	8.1	11.0
	74-07-30	--	379	290	1	15	.6	655	7.9	--
	74-08-27	--	398	310	11	16	.7	640	7.7	12.0
	74-09-10	--	411	310	10	16	.7	655	7.5	--
	74-10-30	--	375	280	0	16	.7	610	8.2	11.5
	74-12-04	--	393	300	0	16	.7	625	--	9.5
	75-01-09	--	387	290	0	16	.7	625	--	7.5
	75-01-30	--	408	290	0	17	.7	640	8.1	7.0
131-059-34B8C1	71-12-09	--	359	250	14	15	.6	631	7.2	7.5
	72-04-04	--	311	250	0	10	.4	500	8.0	6.5
	72-06-08	--	275	210	0	13	.4	469	7.4	12.0
	72-08-29	--	309	230	0	12	.4	495	7.5	7.0
	73-01-05	--	307	270	20	9	.3	505	7.5	--
	73-04-05	--	320	260	11	10	.4	558	7.6	6.0
	73-06-28	--	366	290	28	10	.4	616	8.2	9.0
	73-10-06	--	438	330	55	10	.4	711	7.5	12.0
	74-01-04	--	440	330	40	12	.5	721	7.8	5.5
	74-03-26	--	427	330	12	13	.5	708	8.0	6.0
	74-06-25	--	405	320	35	13	.6	652	7.9	10.0
	74-09-10	--	442	350	32	13	.6	705	7.5	--
	74-12-04	--	409	320	2	13	.6	675	--	9.5
	75-03-04	--	398	310	11	14	.6	475	7.4	8.5
	75-08-21	--	427	250	0	33	1.6	675	7.4	9.0
MC HENRY COUNTY										
156-079-11CCC	74-12-03	--	885	750	190	9	.6	1400	7.5	--
156-079-16BBB	73-04-03	--	448	340	22	16	.7	729	8.3	6.0
	73-06-26	--	419	310	22	17	.7	686	7.8	8.5
	73-10-02	--	424	310	13	19	.8	700	8.2	11.0
	74-01-16	--	501	350	81	21	1.0	800	8.7	--
	74-03-27	--	535	390	93	18	.9	860	8.3	3.0
	74-07-23	--	520	360	63	21	1.0	844	8.3	--
	74-09-13	--	421	290	3	21	.9	702	8.3	--
	74-12-03	--	331	240	0	23	.9	760	9.1	--
	75-03-20	--	377	300	12	18	.8	600	8.3	4.0
	75-06-26	--	581	440	53	13	.7	950	7.7	--
157-078-19CCC	75-09-10	--	589	470	72	12	.6	940	7.6	11.0
	73-04-03	--	304	220	51	19	.7	536	7.5	5.5
	73-06-26	--	324	230	35	20	.7	520	7.6	9.5
	74-03-27	--	271	200	3	23	.9	464	8.9	4.0
	74-09-13	--	276	200	0	21	.8	482	8.5	--
	74-12-03	--	309	230	0	21	.9	510	9.6	--
	75-03-20	--	392	310	31	18	.8	570	8.4	5.5
	75-06-26	--	742	530	140	12	.6	1160	7.9	11.5
	75-09-10	--	741	590	150	10	.5	1150	7.7	12.5
	74-12-04	--	6480	4400	3900	16	2.6	--	7.6	--
158-079-02BBB 158-079-22AAA	73-04-03	239	246	150	0	27	1.0	397	10.2	6.0
	73-06-26	--	213	170	6	24	.9	353	10.0	9.0
	73-10-02	--	306	240	3	13	.5	493	8.6	12.0
	74-01-15	--	223	190	0	14	.4	360	9.3	2.0
	74-03-27	--	224	190	2	13	.4	373	9.4	4.0
	74-07-23	--	217	180	19	17	.6	374	9.2	--
	74-09-12	--	222	200	12	13	.4	387	9.5	--
	74-12-03	--	211	180	0	14	.5	350	9.6	--
	75-03-20	--	218	200	0	14	.5	280	9.0	5.5
	75-06-26	--	213	180	0	15	.5	375	9.1	8.5
158-079-24AAB	75-09-10	--	246	220	5	11	.4	425	8.6	11.5
	73-04-03	--	294	250	32	8	.3	521	7.7	6.0
	73-06-26	--	297	250	18	6	.2	496	7.2	9.0
	73-10-02	--	293	260	6	6	.2	504	7.9	11.0
	74-01-15	--	288	260	13	6	.2	480	8.5	--
	74-03-27	--	281	250	4	6	.2	474	8.3	5.0
	74-09-12	--	171	140	0	10	.3	311	7.8	--
	74-12-03	--	208	190	0	7	.2	362	--	--
	75-03-20	--	199	180	0	8	.2	260	8.5	5.0
	75-06-26	--	181	150	0	10	.3	330	8.4	8.0
	75-09-10	--	254	230	2	6	.2	435	8.0	10.0

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS GROUND-WATER QUALITY SITES

LOCAL IDENT- IFIER	DATE OF SAMPLE	TIME	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED ALUM- INUM (AL) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
MC HENRY COUNTY										
158-080-03888	74-12-04	1200	14	--	30	180	230	120	34	5.3
159-079-24000	74-10-08	1135	19	--	70	1000	480	340	200	16
	74-11-07	1130	18	--	20	1100	500	330	220	15
	74-12-04	1105	18	--	30	440	510	350	190	13
	75-01-09	1030	17	--	20	1900	500	360	250	16
	75-02-07	1050	17	--	10	1400	450	350	250	12
	75-03-20	1410	16	--	20	1600	480	360	220	14
157-079-268881	74-10-08	1330	18	--	120	120	97	42	14	3.9
	74-11-07	1215	17	--	20	90	97	42	14	3.5
	74-12-03	1315	14	--	10	100	100	42	14	3.6
	75-03-20	1210	13	--	10	30	74	37	12	3.2
158-080-250001	74-12-03	1500	12	--	10	90	88	85	170	6.2
158-080-290001	71-12-07	1030	18	--	20	270	60	31	23	9.8
	72-06-06	1110	17	--	30	360	68	32	27	9.0
	72-08-31	1020	23	--	110	430	62	32	23	10
	73-01-03	1100	14	--	9	350	67	34	21	9.2
	73-04-03	1055	18	--	40	390	68	32	22	8.3
	73-06-26	1000	18	--	40	400	73	33	23	9.0
	73-10-02	1425	19	--	50	300	63	31	25	10
	74-03-28	1300	15	--	10	300	61	31	20	9.7
	74-07-24	1850	24	--	150	390	69	32	24	10
	74-09-12	1735	23	--	90	390	65	33	22	13
	74-12-03	1545	15	--	10	360	64	34	19	11

LOCAL IDENT- IFIER	DATE OF SAMPLE	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	ALKA- LINITY AS CAC03 (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	BROMIDE (BR) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)
MC HENRY COUNTY										
158-080-03888	74-12-04	302	--	248	830	6.9	.5	--	--	--
159-079-24000	74-10-08	485	--	398	2400	110	.5	--	--	--
	74-11-07	483	--	396	2400	140	.4	--	--	--
	74-12-04	508	--	417	2400	120	.3	--	--	--
	75-01-09	558	--	458	2700	180	.3	--	--	--
	75-02-07	515	--	422	2500	150	.3	--	--	--
	75-03-20	451	0	370	2500	140	.6	--	--	--
157-079-268881	74-10-08	351	--	288	85	2.7	.5	--	--	--
	74-11-07	357	--	293	89	3.5	.4	--	--	--
	74-12-03	363	0	298	100	2.4	.4	--	--	--
	75-03-20	287	0	235	88	2.7	.5	--	--	--
158-080-250001	74-12-03	489	0	401	430	26	.7	--	--	--
158-080-290001	71-12-07	290	0	238	110	3.4	.6	--	.66	.00
	72-06-06	305	0	250	130	4.4	.2	--	.03	.00
	72-08-31	291	0	239	120	3.0	.3	--	.04	.00
	73-01-03	292	0	240	120	2.9	.3	--	--	--
	73-04-03	282	0	231	120	3.4	.1	--	--	--
	73-06-26	300	0	246	130	4.7	.3	--	--	--
	73-10-02	296	0	243	110	2.9	.2	--	--	--
	74-03-28	268	0	220	110	3.3	.3	--	--	--
	74-07-24	321	0	263	100	4.1	.1	--	--	--
	74-09-12	315	--	258	99	3.0	.2	--	--	--
	74-12-03	307	0	252	97	2.4	.2	--	--	--

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS GROUND-WATER QUALITY SITES

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LOCAL IDENT- T- FIER	DATE OF SAMPLE	TOTAL NITRITE PLUS NITRATE (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (MG/L)	AMMONIA NITRO- GEN (MG/L)	TOTAL ORGANIC NITRO- GEN (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (MG/L)	TOTAL NITRO- GEN (MG/L)	TOTAL PHOS- PHORUS (MG/L)	DIS- SOL- VED- PHOS- PHORUS (MG/L)	DIS- SOLVED ORTHOPHOS- PHORUS (MG/L)
MC HENRY COUNTY										
158-080-03888	74-12-04	--	.05	--	--	--	--	--	.01	.01
159-079-24000	74-10-08	--	.15	--	--	--	--	--	.03	.02
	74-11-07	--	.02	--	--	--	--	--	.00	.03
	74-12-04	--	.07	--	--	--	--	--	.02	.03
	75-01-09	--	.00	--	--	--	--	--	.01	.03
	75-02-07	--	.09	--	--	--	--	--	.03	.04
	75-03-20	--	.02	--	--	--	--	--	.02	.02
157-079-268881	74-10-08	--	18	--	--	--	--	--	.03	.01
	74-11-07	--	17	--	--	--	--	--	.00	.02
	74-12-03	--	14	--	--	--	--	--	.01	.01
	75-03-20	--	12	--	--	--	--	--	.00	.02
158-080-25CCC1	74-12-03	--	14	--	--	--	--	--	.00	.01
158-080-290001	71-12-07	--	.66	--	--	--	--	--	.02	.00
	72-06-06	--	.03	--	--	--	--	--	.03	.01
	72-08-31	--	.04	--	--	--	--	--	.04	.02
	73-01-03	--	.10	--	--	--	--	--	.02	.00
	73-04-03	--	.13	--	--	--	--	--	.02	.01
	73-06-26	--	.05	--	--	--	--	--	.00	.01
	73-10-02	--	.23	--	--	--	--	--	.06	.08
	74-03-28	--	.32	--	--	--	--	--	.01	.01
	74-07-24	--	37	--	--	--	--	--	.06	.06
	74-09-12	--	.38	--	--	--	--	--	.05	.02
	74-12-03	--	.03	--	--	--	--	--	.01	.00

LOCAL IDENT- T- FIER	DATE OF SAMPLE	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)
MC HENRY COUNTY										
158-080-03888	74-12-04	--	1390	1100	820	6	.5	1700	8.0	--
159-079-24000	74-10-08	--	3810	2600	2200	14	1.7	4300	7.6	10.5
	74-11-07	--	3860	2600	2200	15	1.9	4210	7.6	9.0
	74-12-04	--	3850	2700	2300	13	1.6	4500	8.0	--
	75-01-09	--	4300	2700	2300	17	2.1	4500	7.6	7.0
	75-02-07	--	3990	2600	2100	17	2.1	4630	7.7	4.5
	75-03-20	--	3950	2700	2300	15	1.9	--	8.1	7.0
157-079-268881	74-10-08	--	516	420	130	7	.3	820	8.2	11.0
	74-11-07	--	518	420	120	7	.3	830	8.0	10.0
	74-12-03	--	517	420	120	7	.3	800	8.5	--
	75-03-20	--	425	340	100	7	.3	640	8.2	5.0
158-080-25CCC1	74-12-03	--	1120	570	170	39	3.1	1500	8.4	--
158-080-290001	71-12-07	--	402	280	40	15	.6	634	7.3	6.0
	72-06-06	--	438	300	51	16	.7	697	7.4	8.0
	72-08-31	--	417	290	48	14	.6	656	7.4	9.0
	73-01-03	--	413	310	68	13	.5	632	7.7	5.5
	73-04-03	--	412	300	70	13	.6	690	7.4	5.5
	73-06-26	--	440	320	72	13	.6	695	7.5	9.0
	73-10-02	--	409	290	42	15	.6	626	7.2	12.0
	74-03-28	--	384	280	60	13	.5	632	7.5	4.0
	74-07-24	--	424	300	41	14	.6	685	7.5	--
	74-09-12	--	416	300	40	13	.6	680	7.3	--
	74-12-03	--	394	300	48	12	.5	620	8.3	--

SECTION 3. GROUND WATER RECORDS

All wells which have been in the network, which would normally be included in this section, have for various reasons been discontinued. Due to the complete change in the network of wells, no water-level data is being published in this report. It is anticipated that the new network will be selected and approved in time for inclusion in the 1976 water year report "Water Resources Data for North Dakota, 1976".

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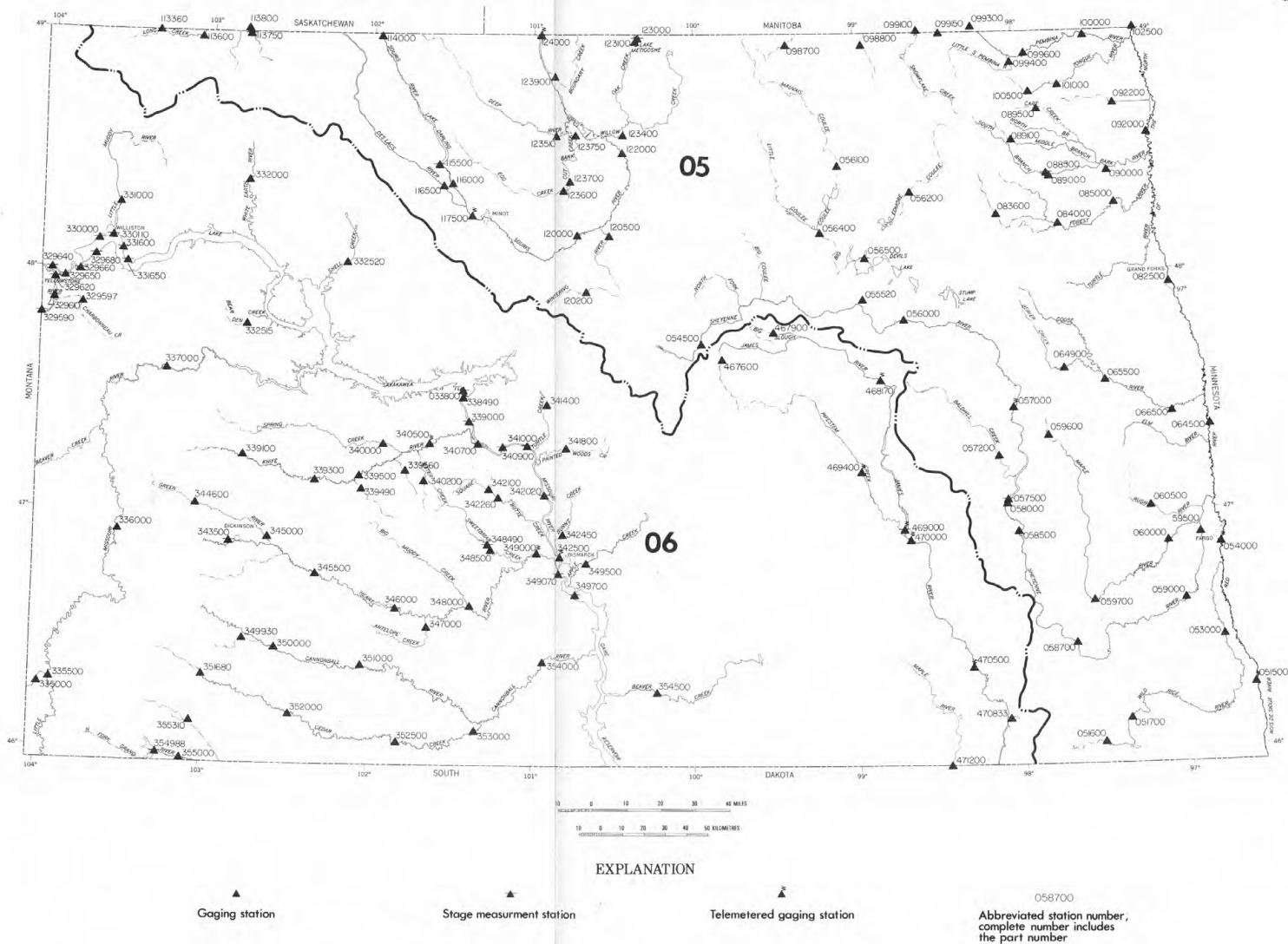
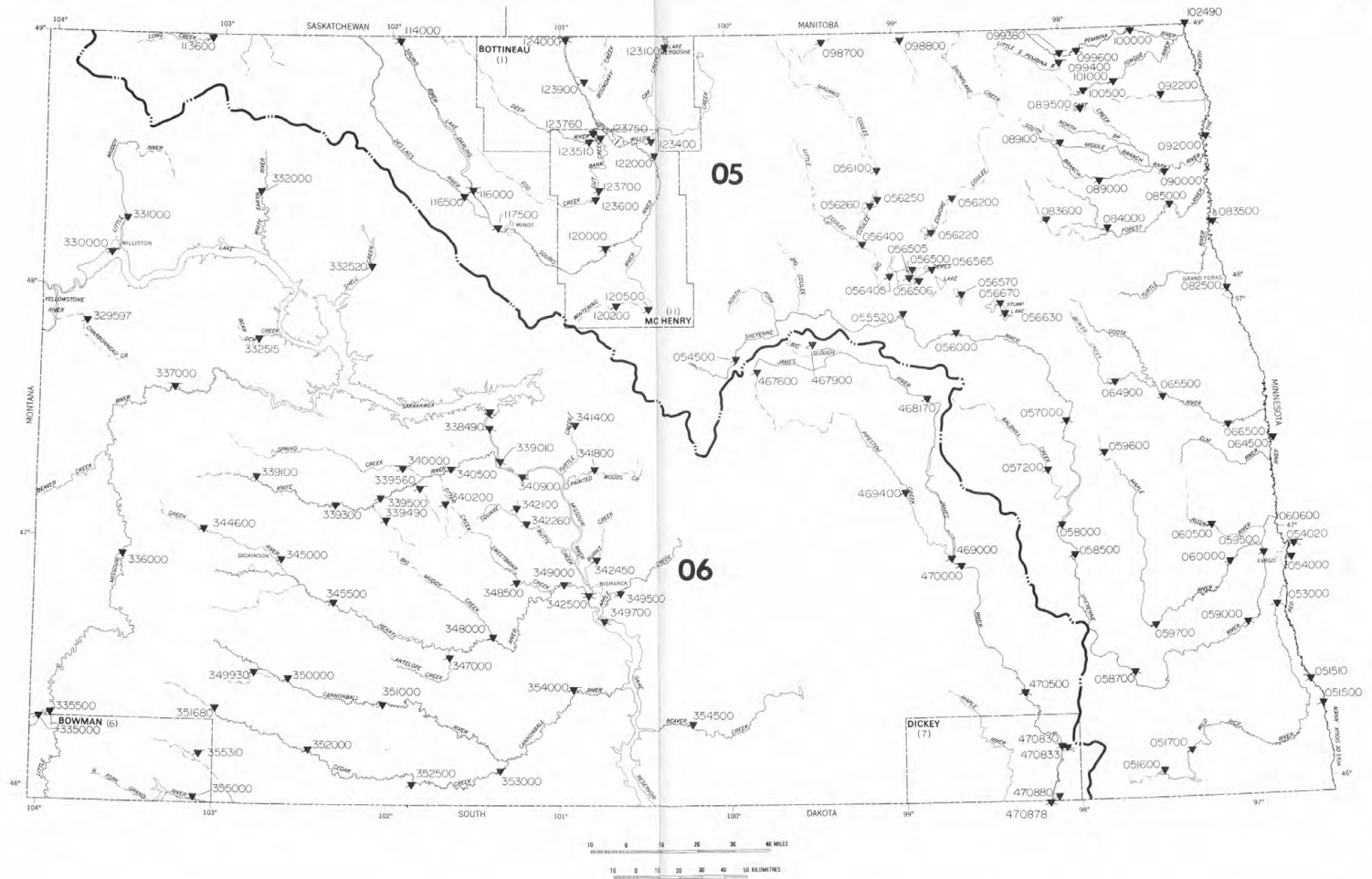


PLATE 1- Locations of lake and stream gaging stations.

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EXPLANATION

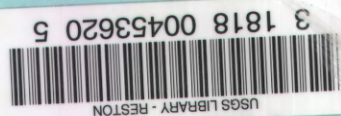
- ▼ Biological measurement station
- ▼ Microbiological measurement station
- ▼ Chemical measurement station
- ▼ Temperature measurement station
- ▼ Sediment measurement station
- 058700 (7)
Abbreviated station number, complete number includes the part number
- (7)
Number of wells in county for which analyses are given

PLATE 2--Locations of water quality stations in North Dakota.

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