

WATER-RESOURCES APPRAISAL OF THE LOWER BRULE INDIAN RESERVATION IN CENTRAL SOUTH DAKOTA

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 95-4116

Prepared in cooperation with the
LOWER BRULE SIOUX TRIBE



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By Kimberly A. Ogle

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Rapid City, South Dakota

1995



U.S. DEPARTMENT OF THE INTERIOR

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CONTENTS

	Page
Abstract	1
Introduction	1
Purpose and scope	2
Previous investigations	2
Description of the study area.....	3
Surficial geology	3
Bedrock geology	3
Water resources	4
Surface-water availability and quality	4
Rivers and streams	4
Stock ponds and dugouts	11
Ground-water availability and water quality	14
Surficial deposits	14
Bedrock units	17
Well inventory	23
Indian water rights.....	23
Water use.....	30
Summary	30
References cited	32
Supplemental information.....	33

ILLUSTRATIONS

Figure 1. Map showing location of study area	2
2. Map showing generalized surficial geology on the Lower Brule Indian Reservation.....	4
3. Diagram showing generalized average annual hydrologic budget for the Lower Brule Indian Reservation	6
4-11. Maps showing:	
4. Locations of stock ponds and dugouts on the Lower Brule Indian Reservation visited in February 1993.....	13
5. Locations of additional stock ponds and dugouts on the Lower Brule Indian Reservation from aerial photographs taken in August and September 1991	14
6. Locations of stock dams that were breached or possibly breached on the Lower Brule Indian Reservation as of 1993.....	15
7. Ground-water availability from surficial deposits on the Lower Brule Indian Reservation.....	16
8. Hydrogeology of the Dakota Sandstone on the Lower Brule Indian Reservation.....	19
9. Hydrogeology of the Inyan Kara Group on the Lower Brule Indian Reservation.....	20
10. Hydrogeology of the Minnelusa Formation on the Lower Brule Indian Reservation	21
11. Hydrogeology of the Madison Group on the Lower Brule Indian Reservation.....	22
12. Hydrographs of water levels in wells completed in the Dakota Sandstone	22
13. Map showing water types in the Dakota Sandstone on the Lower Brule Indian Reservation as of 1972	23
14. Map showing locations of usable wells on the Lower Brule Indian Reservation as of 1992	24

TABLES

	Page
Table 1. Generalized stratigraphic chart of geologic units present in the Lower Brule Indian Reservation.....	5
2. Storage capacities of Missouri River reservoirs adjacent to or upstream from the Lower Brule Indian Reservation.....	6
3. Annual Missouri River discharge at Oahe and Big Bend Dams, 1968-92.....	7
4. Estimated average annual streamflow and peak flows for given recurrence intervals for selected streams on the Lower Brule Indian Reservation.....	8
5. Summary of chemical analyses of water from the Missouri River at Pierre (station 06440000) before filling of Lake Oahe	9
6. Summary of chemical, biological, and suspended-sediment analyses of water from the Missouri River at Pierre (station 06440000) after filling of Lake Oahe	10
7. U.S. Environmental Protection Agency drinking-water regulations.....	11
8. Chemical analyses of water samples collected from Brule and Medicine Creeks near Lower Brule, April 1, 1971	12
9. Qualitative ranking of stock ponds and dugouts on the Lower Brule Indian Reservation used in the 1979 Bureau of Indian Affairs inventory	13
10. Field analyses of water samples collected from stock ponds and dugouts on the Lower Brule Indian Reservation during February 1993.....	15
11. Physical and chemical data for water samples collected at seven shallow wells on the Lower Brule Indian Reservation, 1969.....	18
12. Usable wells on the Lower Brule Indian Reservation, 1992	25
13. Selected field analyses of ground-water samples collected in 1992 from wells on the Lower Brule Indian Reservation.....	29
14. Surface-water use for irrigation on the Lower Brule Indian Reservation	31
15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65.....	34
16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954.....	66
17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation	78

CONVERSION FACTORS AND RELATED INFORMATION

Multiply	By	To Obtain
acre	0.4047	hectare
acre-foot	1,233	cubic meter
acre-foot	0.001233	cubic hectometer
acre-foot per year	1,233	cubic meter per year
acre-foot per square mile	476	cubic meter per square kilometer
cubic foot per second	0.028317	cubic meter per second
foot	0.3048	meter
foot per year	0.3048	meter per year
gallon per day	0.003785	cubic meter per day
gallon per minute	0.06309	liter per second
mile	1.609	kilometer
square mile	2.590	square kilometer

Temperature can be converted to degree Fahrenheit (°F) or degree Celsius (°C) by the following equations:

$$^{\circ}\text{F} = 9/5 (^{\circ}\text{C}) + 32$$

$$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32)$$

Sea level: In this report, “sea level” refers to the National Geodetic Vertical Datum of 1929--a geodetic datum derived from general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929.

The following terms and abbreviations also are used in this report:

μS/cm, microsiemens per centimeter at 25 degrees Celsius

mg/L, milligram per liter

μg/L, microgram per liter

col/100 mL, colonies per 100 milliliter

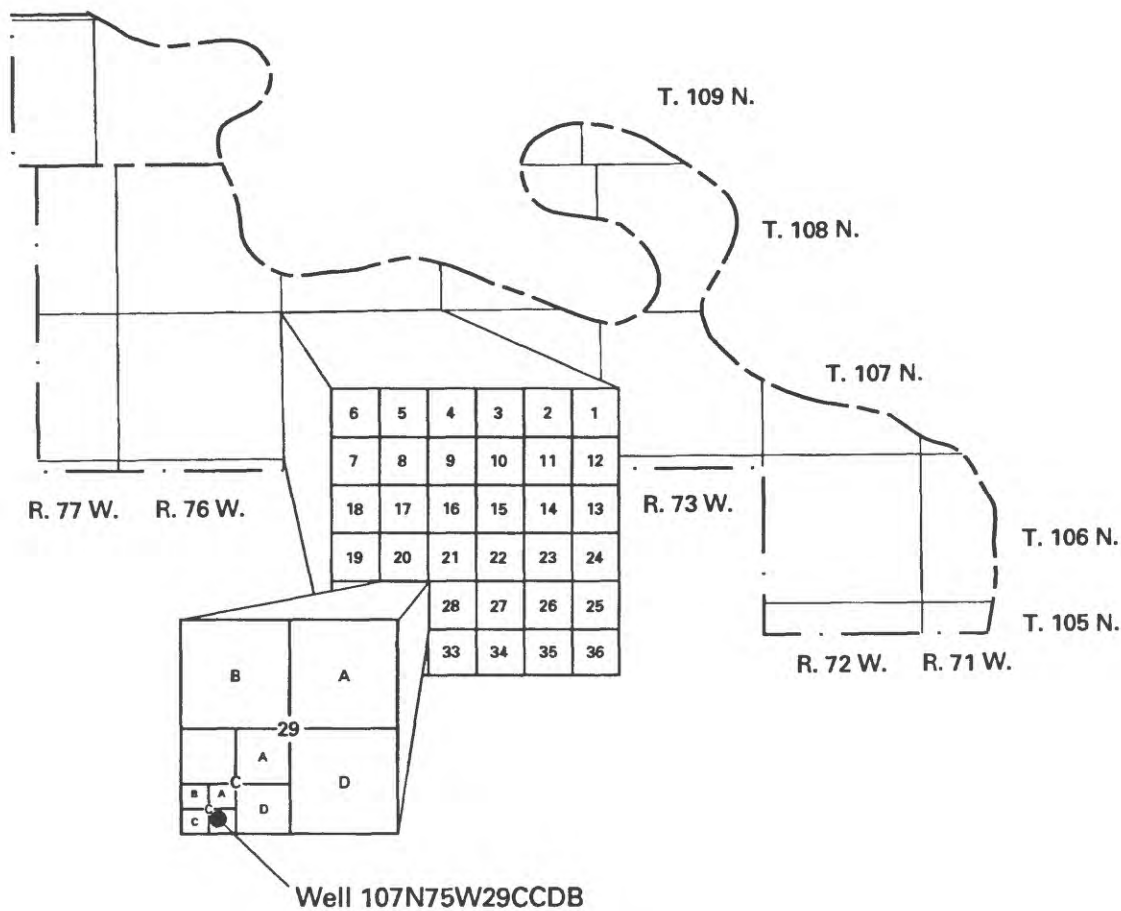
mm, millimeter

NTU, nephelometric turbidity units

μm, micrometer

WELL-NUMBERING SYSTEM

The well-numbering system used in this report is based on the Federal land-survey system for subdivisions of public land. Each “number” (actually number-letter designation) indicates the location of the well with respect to township (T.), range (R.), and section (sec.). Number 107N75W29CCDB indicates a well in T. 107 N., R. 75 W., sec. 29. The last four letters show the location within the section; the first letter (C) identifies the quarter section (160 acres); the second letter (C), the quarter-quarter section (40 acres); the third letter (D) the quarter-quarter-quarter section (10 acres); and the fourth letter (B) the quarter-quarter-quarter-quarter section (2 1/2 acres). Well 107N75W29CCDB is in the northwest quarter of the southeast quarter of the southwest quarter of the southwest quarter of section 29, township 107 north, range 75 west (see figure below). Where more than one well is located within a 2 1/2-acre tract, a number is added following the letter sequence to distinguish them.



WATER-RESOURCES APPRAISAL OF THE LOWER BRULE INDIAN RESERVATION IN CENTRAL SOUTH DAKOTA

By Kimberly A. Ogle

ABSTRACT

The Lower Brule Indian Reservation covers an area of about 404 square miles. Agriculture, primarily livestock and crop production, is the major industry. In 1992, about 5,900 acres were irrigated by the Tribe and about 3,800 other acres either were being irrigated or had State permits for irrigation.

Precipitation averages about 17.4 inches per year. Diversions to the reservation from the Missouri River average about 17,000 acre-feet per year. Evapotranspiration from the land surface of the reservation averages about 17.5 inches per year.

Missouri River reservoirs adjacent to the reservation normally store about 5 million acre-feet of water. Inflow of the Missouri River to the reservation is estimated to be about 18.3 million acre-feet per year. The dissolved-solids concentration of Missouri River reservoir water adjacent to the reservation averages slightly less than 500 milligrams per liter.

All streams on the reservation other than the Missouri River are ephemeral. In 1993, 593 stock ponds and dugouts were located on ephemeral streams. Based on visits to about 10 percent of the stock ponds and dugouts, an estimated 75 percent of the ponds and dugouts were dry, overgrown with vegetation, silted in, or had breached or leaky dams.

Ground-water supplies from surficial deposits are small and are present only along major streams and at some places along the Missouri River. Water suitable for livestock and some domestic use can be obtained throughout the reservation from artesian wells that tap

the Dakota Sandstone or other deeper bedrock aquifers.

The major water use on the reservation is for irrigation. In 1990, slightly more than 17,000 acre-feet was used to irrigate land within the reservation.

INTRODUCTION

The water-resources appraisal of the Lower Brule Indian Reservation was a 3-year study, beginning in 1992, to provide a current inventory of hydrologic information to support development of a comprehensive water plan on the reservation. Specific objectives were to document and describe the existence and status of surface-water and ground-water resources, the status of water quality, and Indian water rights including historical and present water use. This information is needed by tribal leaders to develop a water plan for effective management of the reservation's water resources.

The Lower Brule Indian Reservation covers an area of about 404 square miles within Lyman and Stanley Counties in central South Dakota (fig. 1); of this, about 35 square miles are covered by major reservoirs on the Missouri River and about 201 square miles are owned in trust by the Lower Brule Sioux Tribe or by tribal members (Bureau of Indian Affairs, written commun., Mar. 23, 1994). The reservation is bounded on the north and east by Lakes Sharpe and Francis Case, which are large Missouri River impoundments formed by main-stem dams. Agriculture is the primary industry, consisting mostly of cattle ranching and crop production. In 1992, there

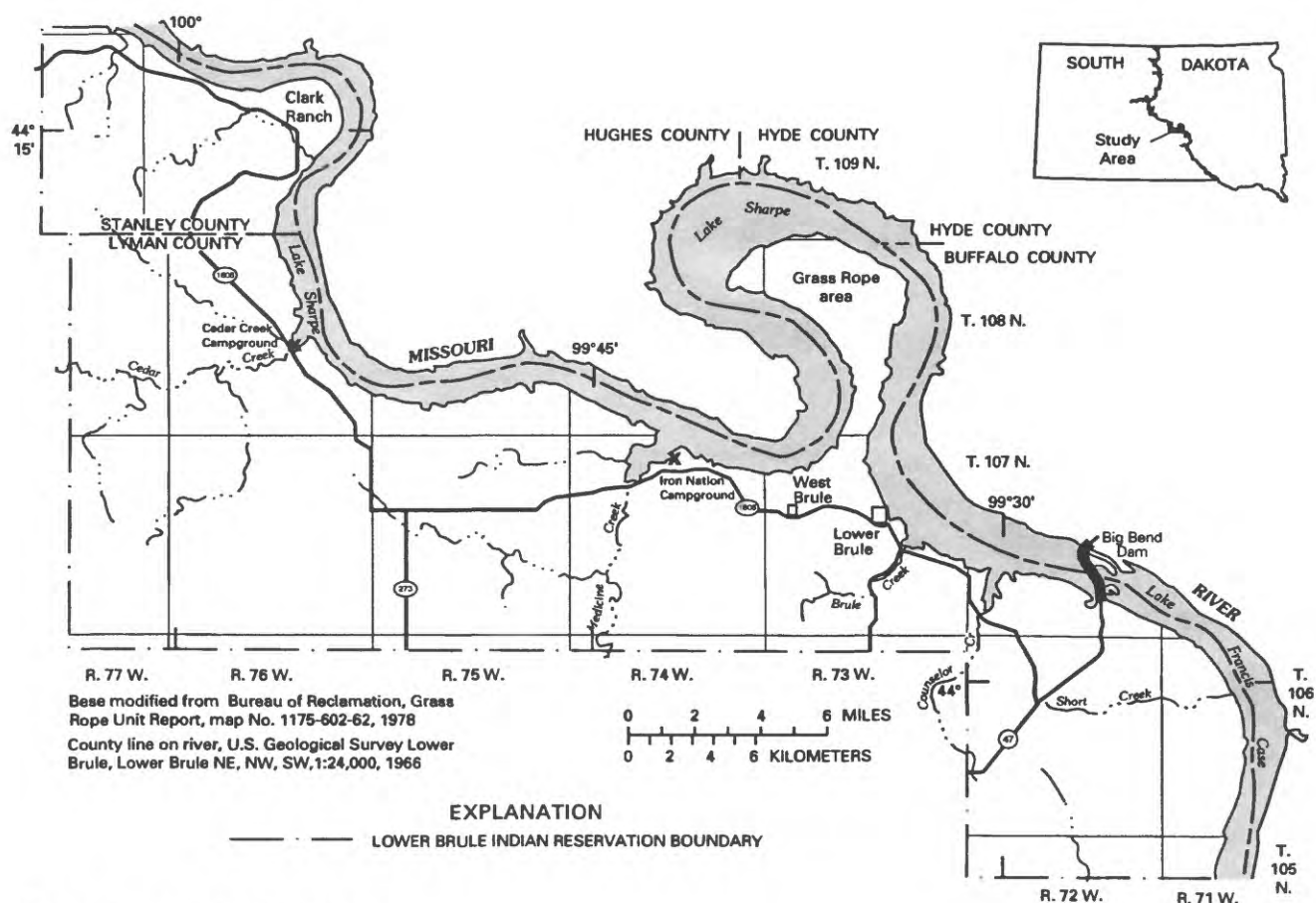


Figure 1. Location of study area.

were 5,901 acres of tribal or other Indian-owned land under irrigation (Tom Young, Bureau of Indian Affairs, oral commun., August 1993) and 3,763 acres of other land within the reservation boundary either under irrigation or for which State permits for irrigation had been issued. Other industries include hunting, fishing, a tribal propane plant, a tribal construction company, and a tribal-owned gaming casino.

Purpose and Scope

This report presents the results of: (1) compilation and analysis of existing hydrologic data; (2) an inventory of surface-water resources using 1991 aerial photographs; (3) an inventory of water wells; (4) a literature search and review, including Indian water-rights issues; and (5) compilation and analysis of water-use data for the Lower Brule Indian Reservation.

Previous Investigations

G.A. La Rocque, Jr. (1966) evaluated the general availability and depth to ground water in the Missouri River Basin. Although no site-specific data were provided, the Lower Brule Indian Reservation does lie within that study area. That report serves as a convenient guide to the approximate depth to ground water and its general availability for domestic, municipal, industrial, and irrigation use.

Howells (1974) studied the geohydrology of the Crow Creek and Lower Brule Indian Reservations of South Dakota. His investigation included the evaluation of surface-water resources (lakes, reservoirs, streams, and stock ponds); surficial geology; shallow ground-water resources; geohydrology of the bedrock aquifers; a generalized stratigraphic column describing the bedrock formations, their hydrologic characteristics, and quality of the water; and selected

water-quality analyses for surface- and ground-water sources on the Crow Creek and Lower Brule Reservations.

Francis-Meador-Gellhaus, Inc., Consulting Engineers, of Rapid City, S. Dak., studied the quantity and quality of the water resources within the boundaries of the Lower Brule Reservation. The resulting "Phase I" report (Francis-Meador-Gellhaus, Inc., Consulting Engineers, 1978) discussed the general physiography of the reservation; water-rights issues; analyses of major drainage basins; climate; surface- and ground-water quality; water resources; the relationship between surface water and ground water; the establishment of a hydrologic monitoring network; and future sources of water. The "Phase II" report (Francis-Meador-Gellhaus, Inc., Consulting Engineers, 1980) discussed tribal goals and objectives; economic base and projections for the reservation; land and agricultural resources; fish and wildlife resources; recreation and tourism; municipal, rural, and industrial water needs; energy aspects; watershed management; and pollution control and water quality.

DESCRIPTION OF THE STUDY AREA

The topography and surficial geology of much of the study area were shaped by the effects of continental glaciation on a land surface underlain by soft shale of marine origin. The Lower Brule Reservation is located on what was the western margin of the last continental glacial ice sheet. The ice sheet scoured the old land surface as it advanced and left a new surface as it retreated. Glaciation changed the courses of many rivers and created the Missouri River.

The formation of the Missouri River caused modification of old drainage patterns and created new ones. Huge volumes of water from melting continental ice sheets enabled the newly created Missouri River to cut its channel several hundred feet into the land surface. As the Missouri River cut its trench deeper, remnants of its valley were left behind as terraces, and tributary streams rapidly cut their channels deeper. Large volumes of shale and glacial drift were carried away by erosion, and the present "breaks" topography began to develop (Howells, 1974).

Surficial Geology

Melting glaciers left behind deposits of material, called drift, that were eroded from the surface over which the ice had moved. If the drift is an unsorted mixture of all sizes from clay to boulders, it is called till. The till on the Lower Brule Reservation generally is silty and sandy clay. Sorted drift, material that was separated by water or wind into different sizes, includes outwash, stream and lake deposits, and loess. The locations of surficial deposits within the reservation are shown in figure 2.

Because the study area is on the border of the glaciated region, much of the land surface is the Pierre Shale; only a small area is now mantled with glacial deposits. Due to the high relief and softness of the Pierre Shale, slumping is very common, particularly in the "breaks" area. Deposits of slumped material and other gravity-caused detritus are called colluvium; however, the colluvium is so mixed with other water-laid deposits that they are mapped together in figure 2. In the trench of the Missouri River, the Pierre Shale is absent and the underlying Niobrara Formation is exposed at the surface or lies beneath the flood-plain deposits.

Traces of ancient streams or rivers are preserved as alluvial deposits (Howells, 1974). A channel across the La Roche terrace (Clark Ranch) may be a former location of the Missouri River valley, a remnant of a preglacial drainage tributary to the Bad River (which enters the Missouri River about 15 miles to the northwest of the study area near Fort Pierre), or an ancient drainage valley of Medicine Creek. A portion of a buried valley, possibly deposits from an ancient channel of Medicine Creek, crosses the Grass Rope area. Such deposits typically contain shallow ground water and form fertile soils for farming.

Bedrock Geology

The Lower Brule Reservation lies on the northern slope of the Sioux uplift near its western end. The reservation extends from near the crest of the uplift down onto the shelf and the transition zone between the shelf and the Williston Basin to the northwest. The geologic units contained in the bedrock sequence,

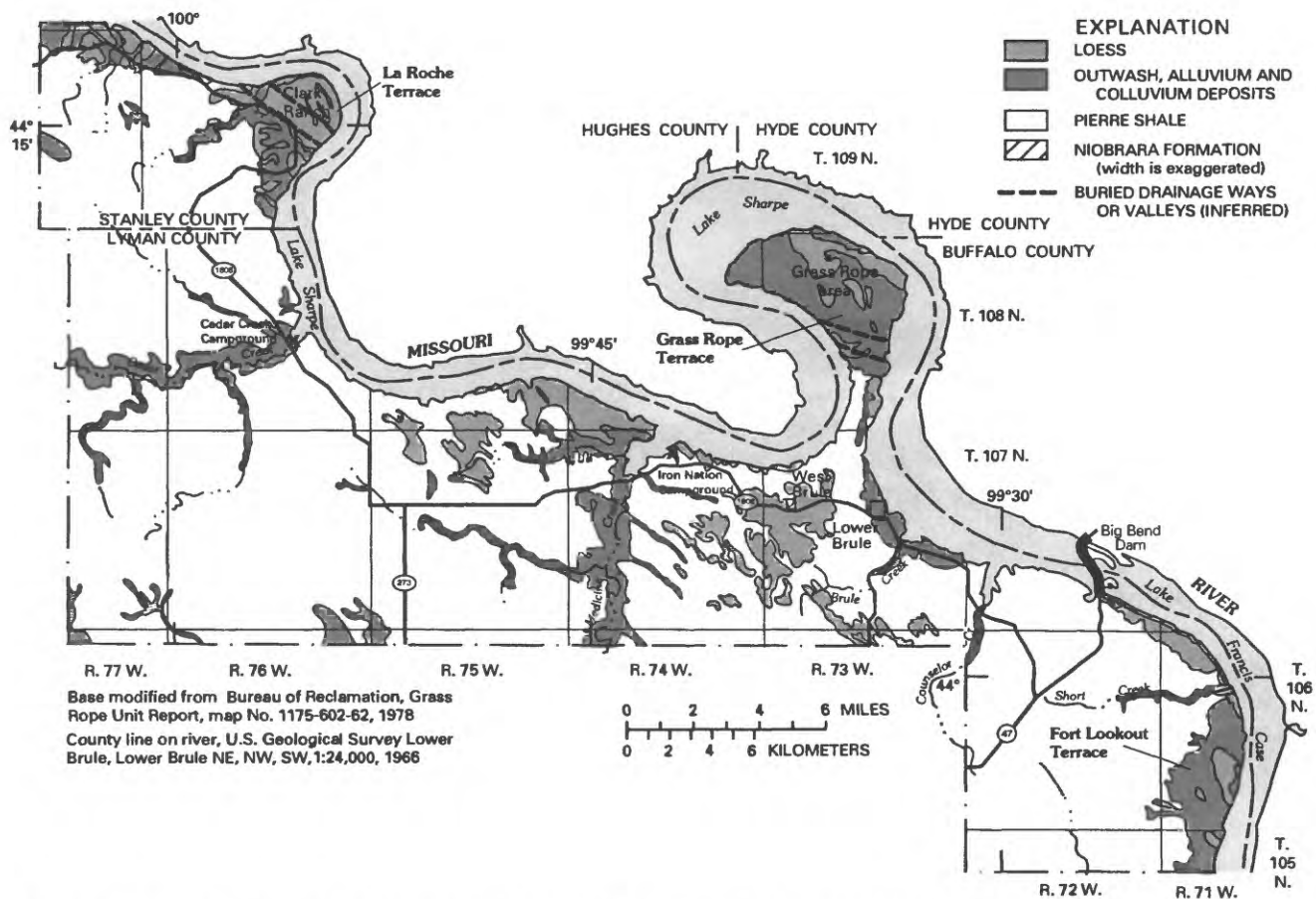


Figure 2. Generalized surficial geology on the Lower Brule Indian Reservation (modified from Howells, 1974).

and their hydrologic significance, are described in the generalized stratigraphic column (table 1).

WATER RESOURCES

Both surface water and ground water are important components of the water resources of the Lower Brule Reservation. However, surface water vastly overshadows ground water in terms of volume and potential for development.

Surface-Water Availability and Quality

The Missouri River is the major surface-water resource available to the reservation. Main-stem reservoirs adjacent to the reservation (Lakes Sharpe and Francis Case) provide a vast supply of good quality water.

Rivers and Streams

The Missouri River, as it enters the reservation, is regulated by three main-stem dams located upstream. The three dams, listed in upstream order, are: Oahe Dam, near Pierre, S. Dak.; Garrison Dam, near Bismarck, N. Dak.; and Fort Peck Dam, near Fort Peck, Mont. These upstream dams, which collectively store an average volume of 51.9 million acre-feet, regulate the year-round flow of the Missouri River and stabilize year-round variations in the quality of water in the river. Big Bend Dam, which forms Lake Sharpe, is adjacent to the Lower Brule Reservation. A fifth dam, Fort Randall Dam, is about 107 miles downstream from Big Bend Dam, but it backs water in its reservoir (Lake Francis Case) to Big Bend Dam. The storage capacities of the five reservoirs mentioned are listed in table 2.

A generalized hydrologic budget was developed for the reservation to quantify the overall surface-

Table 1. Generalized stratigraphic chart of geologic units present in the Lower Brule Indian Reservation

[Modified from Howells (1974). --, not applicable]

System	Geologic unit	Thickness (feet)	General description and hydrologic significance	Water quality
Cretaceous	Pierre Shale	0-550	Dark-grey to black friable shale, marine; relatively impermeable.	Very saline, may contain selenium above the drinking- water regulation of the U.S. Environmental Protection Agency (1993).
	Niobrara Formation	70-160	Chalky shale; relatively impermeable.	
	Carlile Shale	140-325	Grey shale and silty sandstone; relatively impermeable.	Very saline, sodium chloride type water.
	Greenhorn Limestone	50-100	Blue to grey limestone and shale; can yield muddy saline water in some areas.	Very muddy, sodium chloride type water.
	Graneros Shale	150-320	Dark-grey shale, marine; relatively impermeable. May contain a sandy or sandstone facies at its base in the northeastern two-thirds of the reservation.	Muddy, saline, ranges from calcium magnesium sulfate to sodium chloride type water. Gassy.
	Dakota (Newcastle) Sandstone	280-350	Sandstone and silty sandstone, deltaic or near shore; major aquifer.	Ranges from calcium magnesium sulfate to sodium chloride type water. Can be gassy in the upper part of the formation.
	Skull Creek Shale	0-130	Dark-grey shale; relatively impermeable.	--
	Inyan Kara Group	0-80	Sandstone and siltstone, continental to near shore; major aquifer.	Calcium magnesium sulfate type water.
Jurassic	Sundance Formation	0-90	White to red sandstone and green and grey shale, marine; major aquifer.	Calcium magnesium sulfate type water.
Permian and Pennsylvanian	Minnelusa Formation	¹ 0-250	Sandstone, dolomite, limestone, anhydrite, and shale; continental to marine; major aquifer.	Calcium magnesium sulfate type water.
Mississippian	Madison Group	¹ 0-100	Limestone and dolomite and interbedded shales and anhydrite; major aquifer.	Calcium magnesium sulfate type water.
Devonian	Undifferentiated	¹ 0-50	Shales interbedded with anhydrite, sandstones and siltstones, and limestones and dolomite, marine; hydrologic potential unknown.	No data available.
Mississippian(?) to Cretaceous(?)	Transgressive facies of clastic rocks; locally called "basal wash"	0-50	Primarily coarse-grained sandstone, derived from underlying or nearby Precambrian rocks; major aquifer.	Calcium magnesium sulfate type water.
Precambrian	Sioux Quartzite	--	Pink to purple orthoquartzite; impermeable except where fractured.	Calcium magnesium sulfate type water.
	Igneous and metamorphic rocks	--	Variety of granite, gneiss, schist, and metamorphic rocks. Impermeable except where fractured.	--

¹Maximum thickness unknown. Thickness given is speculative.

Table 2. Storage capacities of Missouri River reservoirs adjacent to or upstream from the Lower Brule Indian Reservation

[Source: U.S. Army Corps of Engineers (1993). --, not available]

Dam	Reservoir	Drainage area (square miles)	Storage, in thousands of acre-feet			
			Top of exclusive flood control	Top of flood control and multiple use	Top of carryover multiple use	Top of permanent pool
Fort Randall	Lake Francis Case	263,480	5,494	4,508	3,193	1,545
Big Bend	Lake Sharpe	249,330	1,859	1,799	--	1,682
Oahe	Lake Oahe	243,490	23,137	22,035	18,834	5,373
Garrison	Lake Sakakawea, N. Dak.	181,400	23,821	22,332	18,110	4,980
Fort Peck	Fort Peck Lake, Mont.	57,500	18,688	17,713	14,996	4,211

water system and to show the relative significance of the Missouri River as a water source (fig. 3). Because interaction between surface and ground water on the reservation is small and localized, the hydrologic budget as shown does not include the ground-water components. The budget is considered to represent the period 1968-92, although data for that period were not available for all components of the system.

The discharge of the Missouri River at Oahe Dam (located near Pierre) averaged 18,188,000 acre-feet during 1968-92 (table 3). Inflows to and diversions from the Missouri River between Oahe Dam and the Lower Brule Reservation were used to determine the Missouri River inflow to the reservation. The average inflow (rounded to 18,290,000 acre-feet per year) was calculated by adding the discharge at Oahe Dam

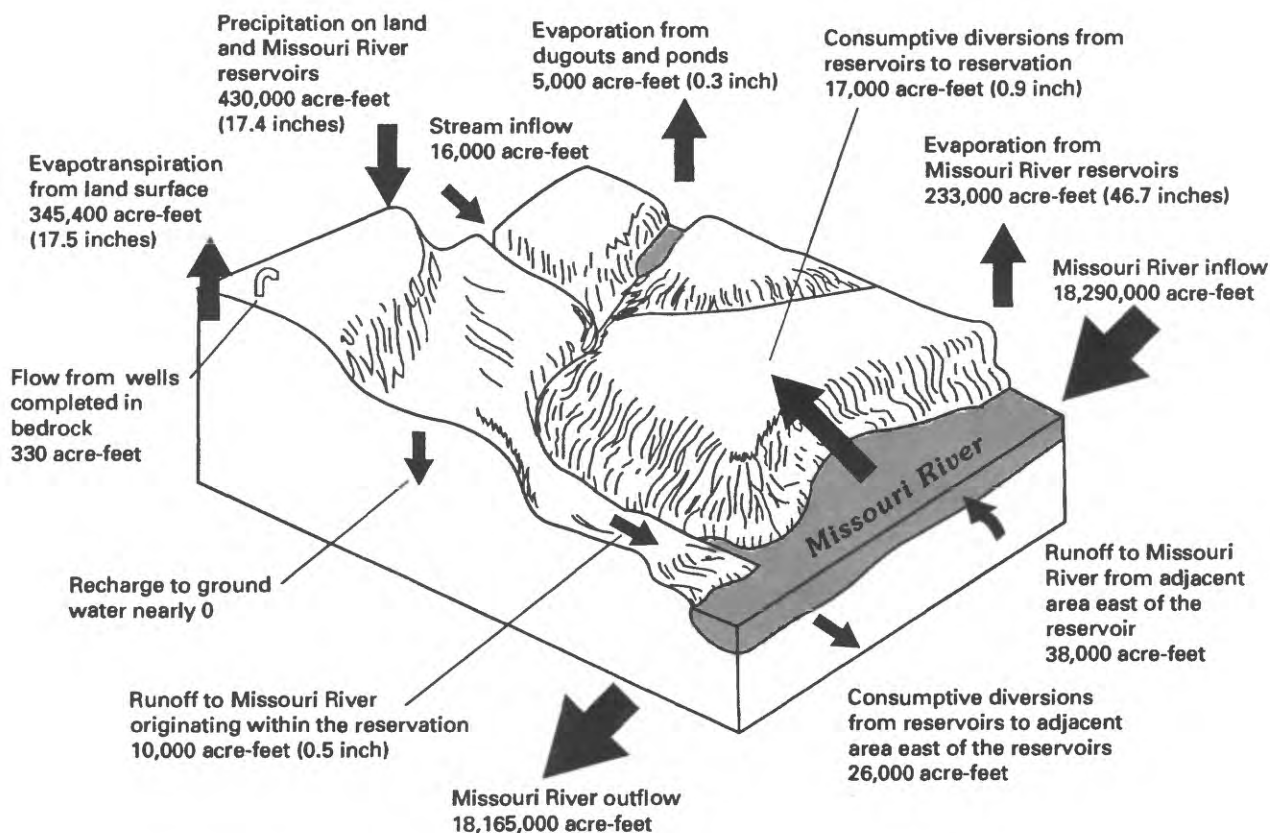


Figure 3. Generalized average annual hydrologic budget for the Lower Brule Indian Reservation.

Table 3. Annual Missouri River discharge at Oahe and Big Bend Dams, 1968-92

Year	Discharge, in millions of acre-feet ¹	
	Oahe Dam	Big Bend Dam
1968	17.8	17.6
1969	20.3	20.2
1970	21.4	21.0
1971	25.2	25.1
1972	23.7	23.9
1973	15.2	15.1
1974	18.1	17.1
1975	26.6	26.6
1976	22.5	22.4
1977	16.5	16.8
1978	21.6	22.1
1979	19.5	19.7
1980	18.6	18.4
1981	17.7	17.1
1982	17.3	16.9
1983	16.8	16.6
1984	17.5	18.4
1985	16.4	16.2
1986	17.1	18.5
1987	16.1	16.9
1988	16.6	16.6
1989	15.2	14.9
1990	13.1	12.7
1991	12.4	12.7
1992	11.5	11.6
Average	18.2	18.2

¹Data supplied by Kevin Grode, U.S. Army Corps of Engineers, oral commun., March 1994.

(18,188,000 acre-feet) to inflows from the Bad River (90,750 acre-feet during 1968-92, calculated from U.S. Geological Survey (USGS) gaging-station records), inflows from Medicine Knoll Creek (4,360 acre-feet, calculated using Larimer's (1970) method), and inflows from Antelope Creek and a few ephemeral streams that drain land adjacent to the reservoir (14,400 acre-feet, calculated using Larimer's (1970) method), and by subtracting 1990 irrigation

diversions (9,644 acre-feet, based on irrigation data stored in the USGS Water-Use Data System). Runoff to the Missouri River in the reach adjacent to the reservation was determined to be 26,000 acre-feet per year from the west side (the part of the reservation in Lyman and Stanley Counties) and 38,000 acre-feet per year from the east side (Hughes, Hyde, and Buffalo Counties) (Larimer, 1970). Diversions from the reach of the Missouri River adjacent to the reservation were virtually all for irrigation use and were determined to be 17,000 acre-feet per year to the west side and 26,000 acre-feet per year to the east side (based on 1990 usage from the USGS Water-Use Data System). Precipitation falling on the reservoir surfaces was estimated to be about 87,000 acre-feet per year, which was calculated by multiplying 17.4 inches of precipitation (determined using a "polygon-of-influence" method and 1951-80 normal annual precipitation for local weather stations) times 59,900 surface acres. Evaporation from the reservoir surfaces was calculated to be about 233,000 acre-feet per year, which was calculated by multiplying 46.7 inches of free-water-surface evaporation (Farnsworth and others, 1982) times 59,900 acres. Using the 18,290,000 acre-feet of Missouri River inflow to the reservation, adding inflows of 64,000 acre-feet, subtracting diversions of 43,000 acre-feet, adding precipitation (87,000 acre-feet), and subtracting evaporation (233,000 acre-feet), the average outflow of the Missouri River from the Lower Brule Reservation was calculated to be 18,165,000 acre-feet per year.

Precipitation falling on the land surface of the reservation was calculated to be about 343,070 acre-feet per year (17.4 inches falling on 236,600 acres). Using this value for precipitation in conjunction with runoff originating within the reservation (10,000 acre-feet per year), diversions from the Missouri River to the reservation that are consumptively used (17,000 acre-feet per year), flow from wells completed in bedrock (330 acre-feet per year, determined during USGS well inventory), and evaporation from ponds and dugouts (5,000 acre-feet per year), evapotranspiration from the land surface of the reservation was calculated to be 345,400 acre-feet per year (17.5 inches).

The USGS operated continuous streamflow-gaging stations on the Missouri River at Pierre (station

06440000) during water years 1934-65 and on the Missouri River at Chamberlain (station 06443000) from September 1928 to September 1929 and from April 1945 to September 1954. Daily values for these two stations are presented in tables 15 and 16 in the Supplemental Information section at the end of this report.

Compared to the annual flow of the Missouri River at Big Bend Dam and the storage of the reservoirs, the amount of surface water used for public water supply and irrigation on the reservation is negligible (less than one-tenth of one percent). Within the boundaries of the reservation, 146 to 157 acre-feet per year is used for public supplies at the towns of Lower Brule and West Brule (Scott Jones, Lower Brule Sioux Tribe, oral commun., Aug. 30, 1993). Irrigation use by the Lower Brule Tribe in the Clark Ranch and Grass Rope areas (fig. 1) was 2,629 and 8,075 acre-feet, respectively, in 1990. Nontribal irrigation use on the reservation in 1990 was 6,414 acre-feet. The reservoirs, particularly Lake Sharpe and the tailwater of Big Bend Dam on Lake Francis Case that normally store about 5 million acre-feet of water, also provide recreational opportunities such as fishing, boating,

waterfowl hunting, and camping along their shorelines.

The Missouri is the only river or stream within the reservation boundaries that flows continuously throughout the year. Most local streamflow reaching the Missouri River is from snowmelt and spring rainfall. Runoff from all but the most intense summer storms usually infiltrates into the subsurface or evaporates before it reaches the Missouri River.

The estimated average annual streamflow and peak flows for selected streams on the Lower Brule Reservation are shown in table 4. The peak-flow data in table 4 are statistical calculations of the magnitudes of peaks that could be expected to be equaled or exceeded an average of every 2, 5, 10, 25, 50, and 100 years.

The peak flows for Cedar Creek on the Lower Brule Reservation were estimated using techniques developed by Becker (1974), which use drainage area (164 square miles) and mean basin elevation (1,837 feet). The peak flows for Medicine Creek were estimated by taking the square root of the ratio of the drainage area of Medicine Creek at the mouth

Table 4. Estimated average annual streamflow and peak flows for given recurrence intervals for selected streams on the Lower Brule Indian Reservation

[mi², square mile; ft³/s, cubic foot per second; --, not calculated]

Drainage basin	Drainage area (mi ²)	Average annual streamflow ¹ (ft ³ /s)	Peak flow ^{2,3,4} , in cubic feet per second, for the given recurrence interval, in years					
			2	5	10	25	50	100
Cedar Creek	164	4.7	853	2,340	3,780	6,780	10,300	13,200
Cedar Creek flow originating within the reservation	81.5	2.3	--	--	--	--	--	--
Medicine Creek	689	19.9	789	3,690	7,700	16,100	25,000	36,700
Medicine Creek flow originating within the reservation	80.5	2.4	--	--	--	--	--	--
Brule Creek	12.7	.4	100	280	500	910	1,400	1,900
Counselor Creek	29.3	.9	130	380	690	1,300	2,000	2,800

¹From Howells (1974). Estimated using the method described by Larimer (1970).

²Based on technique developed by Becker (1974) for Cedar Creek.

³Based on Log-Pearson Type III analysis for period of record 1955-91 for Medicine Creek.

⁴Based on technique developed by Becker (1980) for Brule Creek and Counselor Creek.

(689 square miles) to the drainage area at the streamflow-gaging station on Medicine Creek at Kennebec (station 06442500, located upstream from the reservation) (465 square miles) times the respective peak flows calculated for the Medicine Creek gaging station. The peak flows at the Medicine Creek gaging station were determined by using Log-Pearson Type III analysis for the period of record (1955-91).

The peak flows for Brule Creek and Counselor Creek were estimated using techniques developed by Becker (1980). The equations for peak flows are based on regression relations that are considered applicable (contributing drainage area, main channel slope, and a soil-infiltration index) for estimating flood peaks at sites on basins that have less than 100 square miles of drainage area.

The system of large reservoirs on the Missouri River has stabilized the quality of the river water entering the reservation to a year-round average of slightly less than 500 mg/L of dissolved solids. The water can be characterized as a calcium sodium bicarbonate sulfate type water. The process of water-

quality stabilization began in 1937 with the closure of Fort Peck Dam in Montana, continued with the closures of Garrison Dam in North Dakota in 1953 and Oahe Dam near Pierre, South Dakota, in 1958, and reached its present level in 1964 with the filling of Lake Sharpe, created by the closure of Big Bend Dam in 1963. A summary of chemical analyses of Missouri River water collected at station 06440000 at Pierre before filling of Lake Oahe is given in table 5, and after filling of Lake Oahe is given in table 6. It should be noted that trace-element data presented in this report were not collected or processed using ultra-clean procedures and values could reflect contamination introduced during some phase of collection and processing.

U.S. Environmental Protection Agency (EPA) drinking-water regulations are listed in table 7 for comparison with the water-quality data in tables 5 and 6, as well as other water-quality data presented later in the report. The excellent quality of water in the Missouri River at Pierre after filling of Lake Oahe is evident from comparison of the data in table 6 with the drinking-water regulations in table 7.

Table 5. Summary of chemical analyses of water from the Missouri River at Pierre (station 06440000) before filling of Lake Oahe

[Samples were collected between October 1, 1953, and September 30, 1958. All analyses by U.S. Geological Survey. Reported in milligrams per liter except as indicated. °C, degree Celsius; $\mu\text{S}/\text{cm}$, microsiemens per centimeter at 25°C; --, not determined]

Parameter	Number of samples	Minimum	Maximum	Mean	Median
Specific conductance ($\mu\text{S}/\text{cm}$)	78	469	997	725	718
pH, field (standard units)	79	7.0	8.3	--	7.8
Hardness, total (as CaCO_3)	79	145	354	232	228
Dissolved solids, residue on evaporation at 180°C	79	307	872	487	476
Calcium, dissolved	16	46	75	56	56
Magnesium, dissolved	16	16	26	20	20
Sodium, dissolved	79	41	124	68	66
Sodium, percent	79	34	44	39	38
Sodium-adsorption ratio (units)	79	1.4	2.9	1.9	1.9
Potassium, dissolved	16	3.2	7.0	4.7	4.6
Sulfate, dissolved	48	113	290	208	208
Chloride, dissolved	23	5.5	12.0	8.8	8.7
Fluoride, dissolved	16	0.4	0.7	0.5	0.5
Silica, dissolved	16	7.9	20	12	11

Table 6. Summary of chemical, biological, and suspended-sediment analyses of water from the Missouri River at Pierre (station 06440000) after filling of Lake Oahe

[Samples collected between July 1, 1971, and August 19, 1986. All analyses by U.S. Geological Survey. Reported in milligrams per liter except as indicated. $\mu\text{S/cm}$, microsiemens per centimeter at 25°C; NTU, nephelometric turbidity units; $\mu\text{g/L}$, microgram per liter; col/100 mL, colonies per 100 milliliters; mm, millimeter; K, Results based on colony count outside the acceptance range (nonideal colony count); --, not determined; <, less than]

Parameter	Number of samples	Minimum	Maximum	Mean ¹	Median ¹
Specific conductance ($\mu\text{S/cm}$)	199	600	910	744	736
pH, field, (standard units)	199	7.4	10.2	--	8.2
Turbidity (NTU)	68	0.1	26	3.3	2.0
Oxygen, dissolved	106	6.6	17.4	10.5	9.9
Oxygen, dissolved (percent of saturation)	19	86	108	97	96
Hardness, total (as CaCO_3)	179	200	270	230	230
Alkalinity, total (as CaCO_3)	152	126	190	157	157
Dissolved solids, residue on evaporation at 180°C, dissolved	122	396	617	495	491
Calcium, dissolved	179	49	65	57	57
Magnesium, dissolved	179	18	27	22	22
Sodium, dissolved	179	56	89	69	68
Sodium, percent	179	34	43	38	38
Sodium-adsorption ratio (units)	179	2	2	2	2
Potassium, dissolved	179	3.8	12	4.8	4.7
Sulfate, dissolved	178	170	280	210	210
Chloride, dissolved	179	7.6	17	10	10
Fluoride, dissolved	176	0.3	0.9	0.5	0.5
Silica, dissolved	176	2.4	9.7	6.2	6.2
Nitrogen, nitrite plus nitrate, dissolved (as N)	134	<0.1	5.0	0.20	0.15
Nitrogen, ammonia, dissolved (as N)	58	<0.1	0.25	0.06	0.04
Nitrogen, ammonia plus organic, total (as N)	117	0.05	4.2	0.5	0.3
Phosphorus, total (as P)	177	<0.01	3.8	0.06	0.02
Phosphorus, dissolved (as P)	133	<0.01	1.5	0.03	0.01
Phosphorus, orthophosphate, dissolved (as P)	105	<0.01	1.2	0.02	0.01
Arsenic, dissolved ($\mu\text{g/L}$)	47	1	3	2	2
Barium, dissolved ($\mu\text{g/L}$)	36	36	200	55	46
Beryllium, dissolved ($\mu\text{g/L}$)	16	<0.5	2	0.5	0.4
Cadmium, dissolved ($\mu\text{g/L}$)	47	<1	8	1	0.4
Copper, dissolved ($\mu\text{g/L}$)	47	<1	17	4	3
Iron, dissolved ($\mu\text{g/L}$)	47	3	300	25	9
Lead, dissolved ($\mu\text{g/L}$)	47	<1	21	3	2
Lithium, dissolved ($\mu\text{g/L}$)	16	49	67	55	54
Manganese, dissolved ($\mu\text{g/L}$)	47	<1	30	8	7
Mercury, dissolved ($\mu\text{g/L}$)	47	<0.1	0.5	0.1	0.1
Selenium, dissolved ($\mu\text{g/L}$)	48	<1	2	1	1
Strontium, dissolved ($\mu\text{g/L}$)	16	540	600	570	560
Fecal coliform ² (col/100 mL)	84	<1	K140	12	2
Fecal streptococci ² (col/100 mL)	86	<1	K290	30	12
Sediment, suspended concentration	82	2	162	45	41
Sediment, suspended, sieve diameter, percent finer than 0.062 mm	57	9.4	100	83	92

¹A log probability regression method (Helsel and Gilliom, 1985) was used to estimate means and medians for constituents that had analytical concentrations below the reporting limit.

²Summary statistics for bacterial parameters were calculated using nonideal colony counts.

Table 7. U.S. Environmental Protection Agency drinking-water regulations

[Contaminants regulated under the Safe Drinking Water Act of 1986.
 --, no established regulation; NTU, nephelometric turbidity units;
 mg/L, milligram per liter; µg/L, microgram per liter]

	Primary drinking-water regulation ¹	Secondary drinking-water regulation ¹
	MCL ²	SMCL ³
pH (standard units)	--	6.5-8.5
Turbidity (NTU)	<5	--
Total dissolved solids (mg/L)	--	500
Sulfate (mg/L)	--	250
Chloride (mg/L)	--	250
Fluoride (mg/L)	4.0	2.0
Nitrate, as N (mg/L)	10	--
Nitrate + nitrite, as N (mg/L)	10	--
Arsenic (µg/L)	50	--
Barium (µg/L)	2,000	--
Beryllium (µg/L)	4	--
Cadmium (µg/L)	5	--
Copper (µg/L)	--	1,000
Iron (µg/L)	--	300
Lead (µg/L)	50	--
Manganese (µg/L)	--	50
Mercury (µg/L)	2	--
Selenium (µg/L)	50	--

¹U.S. Environmental Protection Agency (1993).

²MCL = Maximum Contaminant Level: Enforceable, health-based regulation.

³SMCL = Secondary Maximum Contaminant Level: Contaminants that affect the esthetic quality of drinking water. At high concentrations or values, health implications as well as esthetic degradation may exist. SMCL's are not federally enforceable but are intended as guidelines for the States.

Little water-quality data are available for streams on the reservation. The USGS water-quality data base contains only one analysis each for Brule Creek and Medicine Creek. These data are presented in table 8. The 1971 samples exceeded EPA drinking-water regulations (U.S. Environmental Protection Agency, 1993) for chloride, sulfate, and dissolved solids in Brule Creek and for sulfate, cadmium, and dissolved solids in Medicine Creek.

It is not possible to characterize the quality of water in Brule and Medicine Creeks based on only one

sample taken more than 20 years ago. However, specific-conductance measurements for Medicine Creek at Kennebec may provide some information on general water-quality variability for ephemeral tributaries within the reservation. Fifty specific-conductance measurements made by the USGS at this site during the period 1978-92 ranged from 284 to 2,500 µS/cm, with a median of 762 µS/cm. Specific conductance generally was lower during larger flows and higher as flow approached zero. Generally, major-ion chemistry of ephemeral tributaries on the reservation would be expected to vary widely from year to year and during individual years, depending largely on flow conditions.

Stock Ponds and Dugouts

Except for the terraces and parts of the rolling uplands on the Lower Brule Reservation, much of the land is unsuitable for large-scale crop production because of rugged topography and/or poor soils. The Bureau of Indian Affairs (1964) soil and range studies revealed that only 16 percent of the land on the Lower Brule Reservation is suitable for production of cultivated crops. Thus, much of the area is rangeland or hayland used for ranching. For many ranchers, the least expensive way to provide dispersed water supplies is to capture and hold spring runoff and occasional summer stormflow in stock ponds (formed by a dam) or dugouts constructed in ephemeral streambeds and drainageways.

Several surveys have been made to inventory the stock ponds and dugouts on the Lower Brule Reservation. A survey conducted by Howells (1974) indicated that there were 526 stock ponds and dugouts on the reservation in 1970. Of these, 343 (65 percent) were less than 1 acre in size; 158 (30 percent) were between 1 acre and 5 acres in size; and 25 (5 percent) were greater than 5 acres but less than 20 acres in size.

In a 1979 stock-dam inventory of the reservation made by the Bureau of Indian Affairs (Division of Natural Resources, written commun., undated), 160 stock ponds and dugouts were located and mapped, and 109 were measured for depth and size. The condition of each pond or dugout was ranked qualitatively as shown in table 9. The survey indicated that in most shallow ponds (less than 8 feet deep), the

Table 8. Chemical analyses of water samples collected from Brule and Medicine Creeks near Lower Brule, April 1, 1971

[Analyses by U.S. Geological Survey. Reported in milligrams per liter (mg/L) except as indicated. °C, degree Celsius; $\mu\text{S}/\text{cm}$, microsiemens per centimeter at 25°C; $\mu\text{g}/\text{L}$, micrograms per liter; ND, analyzed for but not detected; --, no data]

Parameter	Brule Creek near Lower Brule (Site ID 440334099340500) ¹	Medicine Creek near Lower Brule (Site ID 440357099441100) ¹	Parameter	Brule Creek near Lower Brule (Site ID 440334099340500) ¹	Medicine Creek near Lower Brule (Site ID 440357099441100) ¹
Specific conductance ($\mu\text{S}/\text{cm}$)	3,470	1,090	Bicarbonate, field	300	130
pH (standard units)	8.1	7.9	Carbonate, field	0	0
Hardness, total (as CaCO_3)	1,100	390	Sulfate, dissolved	1,400	440
Hardness, noncarbonate (as CaCO_3)	810	270	Chloride, dissolved	300	28
Alkalinity, field (as CaCO_3)	248	109	Fluoride, dissolved	1.0	0.50
Solids, dissolved, sum of constituents	2,700	781	Silica, dissolved	17	12
Solids, dissolved, residue at 180° C	2,890	825	Nitrogen, nitrate, dissolved (as N)	0.22	0.09
Solids, dissolved (tons per day)	0.55	--	Nitrogen, nitrate, dissolved (as NO_3)	1.0	0.40
Solids, dissolved (tons per acre-foot)	3.93	1.12	Phosphorus, total (as P)	0.07	0.09
Calcium, dissolved	280	110	Arsenic, dissolved ($\mu\text{g}/\text{L}$)	ND	ND
Magnesium, dissolved	85	27	Boron, dissolved ($\mu\text{g}/\text{L}$)	780	110
Sodium, dissolved	440	87	Cadmium, dissolved ($\mu\text{g}/\text{L}$)	2.0	12
Sodium, percent	47	32	Lithium, dissolved ($\mu\text{g}/\text{L}$)	210	90
Sodium adsorption ratio	6	2	Mercury, dissolved ($\mu\text{g}/\text{L}$)	ND	ND
Potassium, dissolved	17	9.5	Selenium, dissolved ($\mu\text{g}/\text{L}$)	ND	ND
			Strontium, dissolved ($\mu\text{g}/\text{L}$)	5,800	1,100

¹The site-numbering system of the U.S. Geological Survey is based on the international system of latitude and longitude. The number contains 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude north of the equator. The next seven digits denote degrees, minutes, and seconds of longitude west of the prime (Greenwich) meridian. The last two digits are sequential numbers within the same 1-second block. These systems provide the geographic location of the site and a unique number for each site.

storage capacity had been reduced because of siltation. Many of the dams were in suitable locations to capture surface runoff; however, their effectiveness was reduced because they were old, seepage through the dams was substantial, and the spillways were in poor condition.

For this study, an inventory of ponds was made from aerial photographs taken in August and September 1991; there were 593 stock ponds and dugouts (which had an estimated total area of 1,300 acres) and 29 other ponds (sewage ponds, sewage lagoon, and irrigation seepage or drainage ponds) within the reservation boundary. Of the 593

stock ponds and dugouts, 284 were less than 1 acre in size; 268 were from 1 to 5 acres in size; 34 were from 5 to 20 acres in size; and 4 were greater than 20 acres in size (size was not determined for three ponds).

During February of 1993, 52 stock ponds and dugouts were visited (fig. 4). The condition of all but two of the ponds that were visited was ranked qualitatively according to the system used for the 1979 survey. A tabulation of the ponds and dugouts visited and comments on their condition are included in table 17 in the Supplemental Information section. Of the 50 sites that were ranked, 33 were ranked as poor, 5 below average, and 12 average or better.

Table 9.--Qualitative ranking of stock ponds and dugouts on the Lower Brule Indian Reservation used in the 1979 Bureau of Indian Affairs (Division of Natural Resources, written commun., undated) inventory

Ranking criteria	Qualitative rank	Number of stock ponds and dugouts
When full, depth is equal to or greater than 10 feet and surface area is greater than or equal to 2 acres.	Average or better	4
When full, depth equals 10 feet and surface area is less than 2 acres; or pond depth is equal to or greater than 6 feet and less than 10 feet, any surface area.	Below average	49
When full, depth is less than 6 feet (silted in), any surface area.	Poor	56

The locations of those stock ponds and dugouts in apparently usable condition that were inventoried from 1991 aerial photographs, but not visited, are shown in figure 5. These ponds also are listed by location of the dam or dugout, along with estimated size, in table 17. The locations of the 62 stock dams that were breached or possibly breached, as observed either by visit or on aerial photographs, are shown in figure 6. Information about the ponds formerly impounded by these dams also is given in table 17.

The chemical quality of water in stock ponds and dugouts varies, depending upon the water source and time of the year. Water quality probably is best in spring following snowmelt and spring rains and probably is poorest in late summer, fall, or winter when water in ponds has been concentrated by evapo-transpiration and/or ice formation and may have been stagnant for several months.

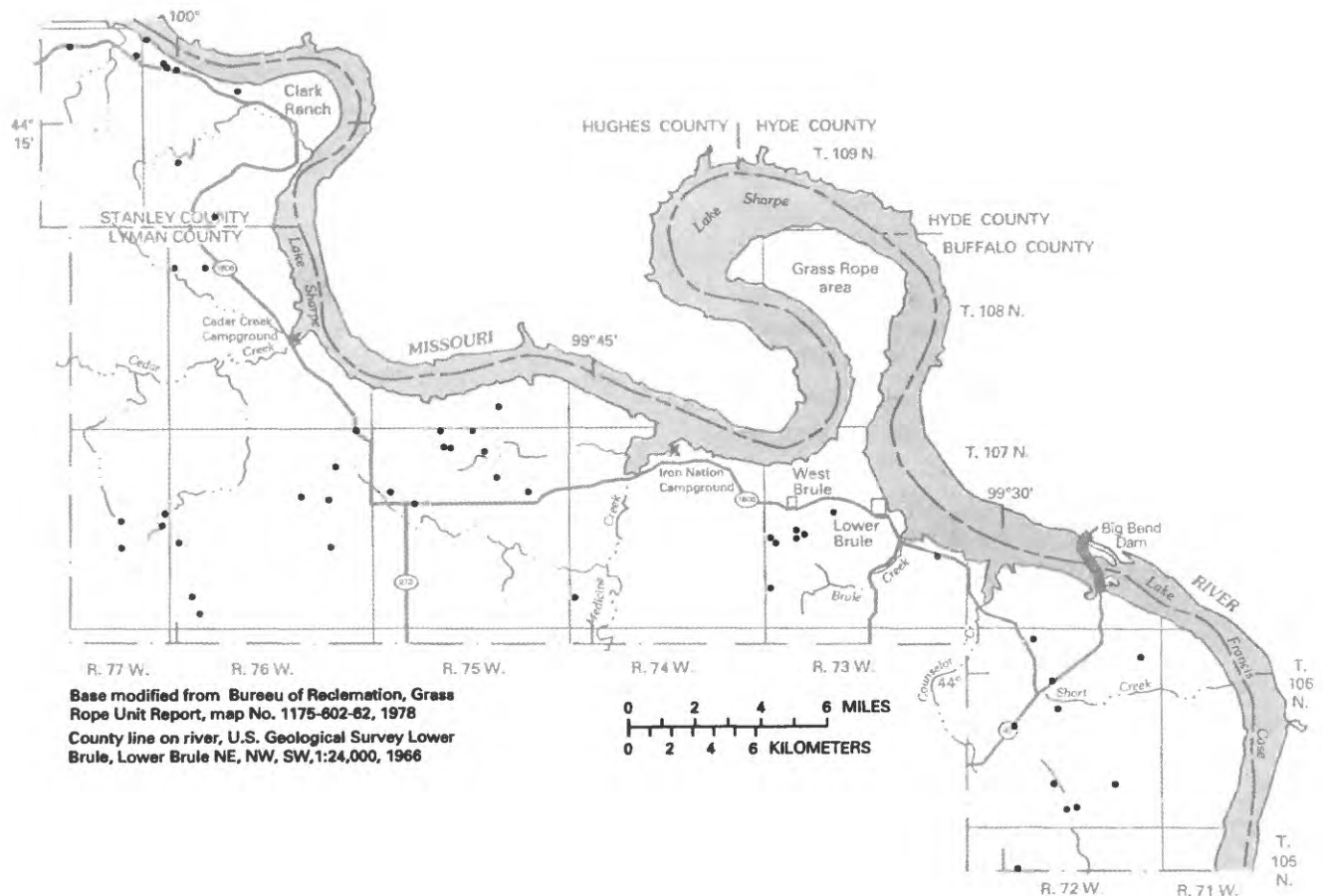


Figure 4. Locations of stock ponds and dugouts on the Lower Brule Indian Reservation visited in February 1993.

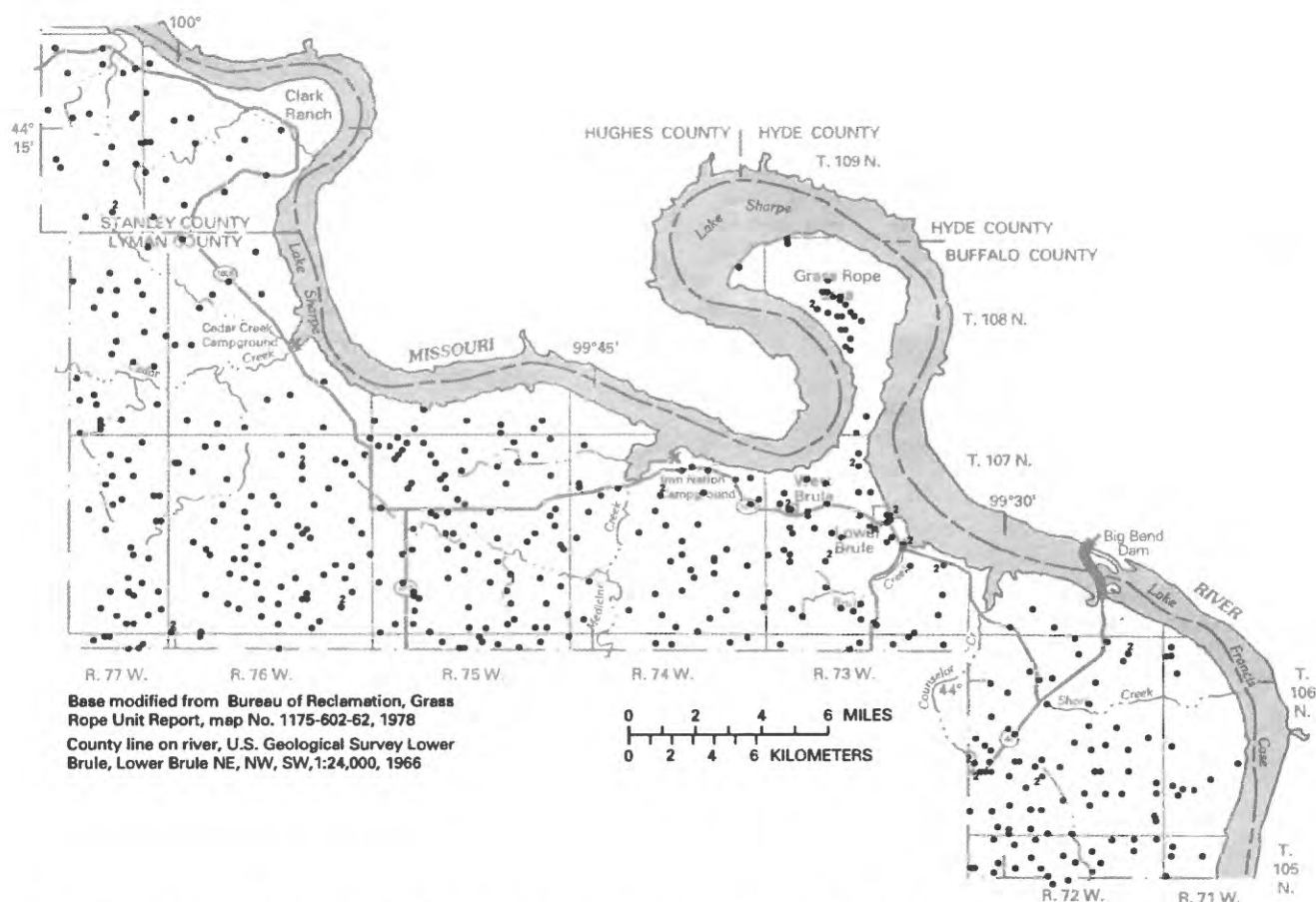


Figure 5. Locations of additional stock ponds and dugouts on the Lower Brule Indian Reservation from aerial photograph taken in August and September 1991.

Many of the stock ponds and dugouts visited in 1993 could not be sampled because they were dry, were overgrown with vegetation, or the water in them was completely frozen. Field analyses of the samples collected during that inventory are shown in table 10. These results may not be representative because, as stated previously, the quality of water in these impoundments probably varies greatly throughout the year, depending on dilution by runoff, concentration of salts by evaporation, and influshing of soluble minerals and organic matter.

Ground-Water Availability and Water Quality

Ground water on the Lower Brule Reservation can be obtained from surficial deposits at selected locations and from bedrock units that underlie the

entire area. The quality of much of the ground water is less than desirable.

Surficial Deposits

The possibility of obtaining adequate supplies of good-quality water from surficial deposits is limited to parts of some terraces along the Missouri River (fig. 7). The sand and gravel deposits underlying the major terraces are good sources of water only where they are thick enough to extend below the water table (corresponding to the local water level in the Missouri River reservoirs). Thus, the ancient channels across the La Roche Terrace and Grass Rope area are potentially good sources of water. Locally, yields of 50 gallons per minute may be obtained from wells screened within the terrace deposits. The quality of the water varies, depending upon the source of the water and the permeability and local composition of

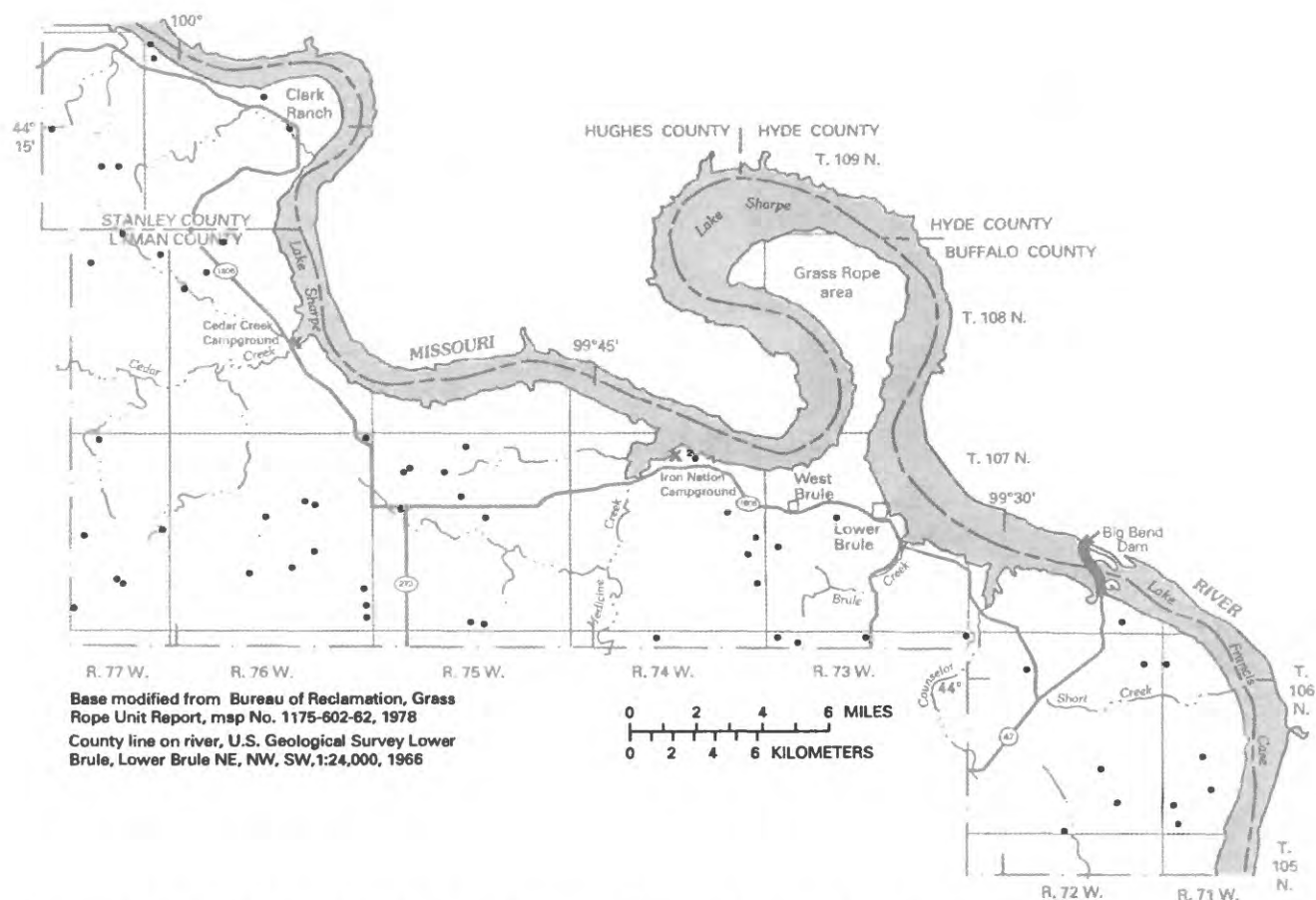


Figure 6. Locations of stock dams that were breached or possibly breached on the Lower Brule Indian Reservation as of 1993.

Table 10. Field analyses of water samples collected from stock ponds and dugouts on the Lower Brule Indian Reservation during February 1993

[--, not analyzed]

Location	pH	Alkalinity (milligrams per liter)	Specific conductance (microsiemens per centimeter at 25 degrees Celsius)	Location	pH	Alkalinity (milligrams per liter)	Specific conductance (microsiemens per centimeter at 25 degrees Celsius)
106-72-4BCBC	7.06	51	700	107-76-1ABBC	7.02	154	700
107-73-16ACDC/D ¹	7.92	514	710	107-77-14DCBA	9.13	--	100
107-73-19BCAC	8.07	--	200	107-77-23DBBA/B	8.15	--	600
107-73-30CCAC	7.82	51	600	109-76-29BBBB/C	7.40	205	500
107-74-31BBAA	7.04	--	1,320	109-76-33CBDD and CCAA	7.64	120	100
107-75-3CADA/D	7.43	223	300				
107-75-11DDCA and DDDB	7.22	240	270				

¹"P" infers that dam is located on divide between quadrant ACDC and quadrant ACDD (see page vi for further explanation).

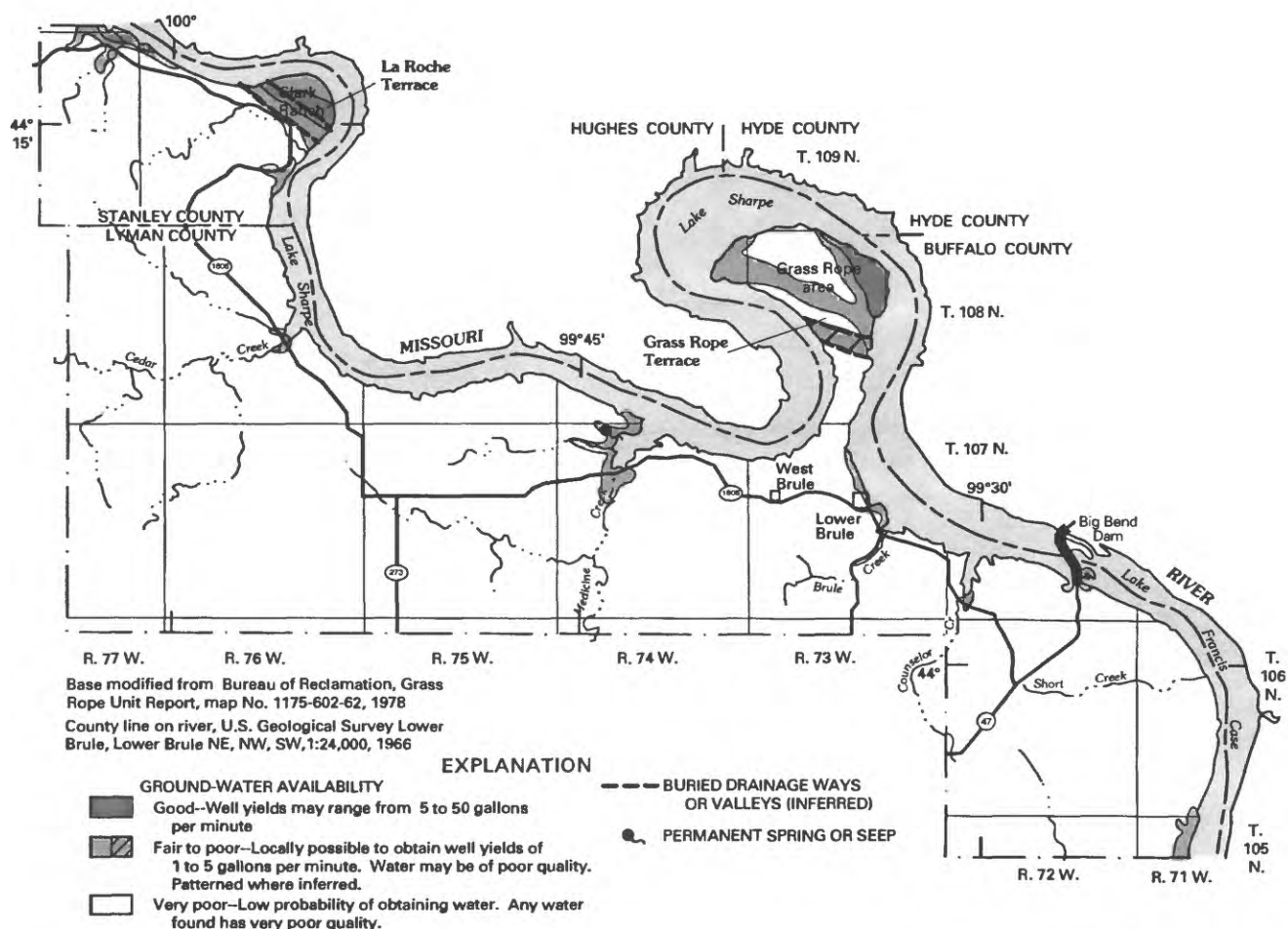


Figure 7. Ground-water availability from surficial deposits on the Lower Brule Indian Reservation (modified from Howells, 1974).

the deposits. The better quality water comes from Lake Sharpe through coarse, clean gravel; the poorer quality water probably infiltrates through clayey material and may occur on top of the Pierre Shale bedrock surface beneath the terraces.

Where the base of the terrace is above the reservoir water level, the high permeability of the sand and gravel and the steep slope of the underlying bedrock surface permit rapid discharge of infiltrating precipitation to the Missouri River. Thus, most of the areas within the Grass Rope and La Roche terraces, for example, do not contain large or dependable supplies of water although locally the sand and gravel may be more than 90 feet thick. If wells were completed in the deeper parts of these deposits near the bedrock surface, small to moderate supplies of water of varying quality might be obtained; but such wells might go dry in late summer or fall.

Pierre Shale, which is at or near the surface in much of the area, has almost no potential as a source of potable water. The Pierre Shale usually will not yield water to wells; but where water can be obtained, generally it is of limited quantity and saline. The shale, which is relatively impermeable, acts as a barrier to the downward movement of ground water, causing the water to move laterally to points of discharge at contact springs. Many small springs and seeps occur along contacts between the Pierre Shale and overlying surficial deposits. The quality of water from these contact springs ranges from fairly good to very poor. Most springs and seeps are temporary and go dry by late summer. Colluvium and alluvium along streams draining areas where shale is at the surface commonly are composed of clay or silty clay and are relatively impermeable; the water in these deposits usually is of poor quality.

Glacial till is not much better than the Pierre Shale as a potential source of water. Locally, thin beds or lenses of gravel, sand, or silt within the till may yield small quantities of water, typically of poor quality.

Alluvium along several streams, particularly at the mouths of Cedar, Medicine, Brule, and Counselor Creeks, potentially may yield small quantities of water. However, this water also commonly is of poor quality.

Very few permanent springs or seeps exist on the reservation. Most of the springs and seeps mapped by the Bureau of Indian Affairs (1964) soil and range surveys are temporary and go dry by late summer. Some are seepage from nearby stock ponds or dugouts. Howells (1974) states that all permanent springs on the Lower Brule Reservation have flows of less than 5 gallons per minute. The location of the one permanent spring on the Lower Brule Reservation that is listed in the USGS data base is shown in figure 7.

The quality of water in surficial deposits varies widely, often within short distances. For example, water from a well at one locality was of calcium bicarbonate type while water from a well a quarter mile away, apparently screened in the same water-bearing zone, was of sodium sulfate type. Where such water supplies have been in contact with the Pierre Shale, water quality may be poor, and dissolved-solids concentration can exceed 4,000 mg/L. Such variations make it difficult to predict water quality reliably when selecting well sites. In general, the cleaner, coarser, and more permeable aquifer material tends to yield better quality water. The USGS water-quality data base contains only one analysis each for seven shallow wells located on the reservation. These analyses, from samples taken in 1969, are presented in table 11. Comparing the data in table 11 to the EPA drinking-water regulations in table 7 indicates that dissolved-solids concentration exceeded the Secondary Maximum Contaminant Level (SMCL) for all seven wells. The SMCL for sulfate was exceeded in six wells, the SMCL for iron and manganese was exceeded in two wells, the SMCL for chloride was exceeded in one well, and the Maximum Contaminant Level (MCL) for nitrate (as N) was exceeded in one well.

Bedrock Units

Artesian bedrock aquifers underlie the entire study area. These aquifers are part of a thick sequence of sedimentary units that extend across the State.

The most important aquifers are contained in the Dakota Sandstone, the Inyan Kara Group, the Minnelusa Formation, and the Madison Group. Hydraulic head commonly increases with stratigraphic depth in these major aquifers, which are shown in figures 8, 9, 10, and 11. Thus, at a given site, greater artesian pressure generally can be obtained by tapping a deeper aquifer (where present) rather than a shallower aquifer.

The Dakota Sandstone is the most intensively developed aquifer in the State. On the Lower Brule Reservation, about 40 percent of wells in use tap this aquifer. Hydraulic head in the Dakota Sandstone has been declining (fig. 12) during the past 100 years and will continue to do so as long as aquifer withdrawals exceed recharge. Intensive development of deeper aquifers and the consequent decline in artesian pressure in them will cause an additional drop in head in the Dakota because most recharge to the Dakota currently is from the deeper aquifers. The average rate of decline in the Dakota currently is less than 1 foot per year (Winter, 1994), which may indicate that artesian pressure is stabilizing.

Most well owners are aware of the value of conserving and maintaining artesian pressure of the aquifers and many have equipped their flowing wells with control valves. Even though flow is reduced below the maximum rate, many wells flow at larger rates than are actually needed. Most wells drilled within the last 30 years are cased with copper or plastic because black iron or steel casings tend to deteriorate rapidly and corrode in permeable beds containing more saline water. Thus, copper or plastic casings tend to reduce long-term well costs by lengthening useful well life, as well as conserving pressure and maintaining original water quality.

Wells completed in the Dakota Sandstone yield moderately saline (more than 3,000 mg/L dissolved solids) sodium chloride type water that commonly is gassy. Some stock wells yield enough gas to support a flame.

Table 11.--Physical and chemical data for water samples collected at seven shallow wells on the Lower Brule Indian Reservation, 1969

[Reported in milligrams per liter (mg/L) except as indicated. °C, degree Celsius; µS/cm, microsiemens per centimeter at 25°C; µg/L, micrograms per liter; ND, analyzed for but not detected; --, no data; <, less than]

Parameter	109N76W 13BBBB ¹	109N77W 2ADDD ¹	107-73- 22ADCC ^{2, 3, 4}	107-74- 3CBCB ^{5, 6}	107-74- 5ABBC1 ^{1, 7}	108-73- 10BBBB1 ¹	108-76- 22ACDB ^{5, 8}
Sample date	06-18-69	06-19-69	08-05-69	09-24-69	06-18-69	06-18-69	09-18-69
Depth of well (feet)	80	35	45	22	6	47	28
Elevation of land-surface datum (feet above sea level)	1,456	1,475	1,445	1,425	1,460	1,483	1,428
Specific conductance (µS/cm)	3,490	4,880	3,220	--	821	3,600	--
pH (standard units)	7.6	7.7	7.9	7.9	8.0	8.0	7.5
Temperature (°C)	12.5	11.1	--	--	13.0	10.6	--
Carbon dioxide, dissolved	12	12	--	--	--	--	--
Hardness, total (as CaCO ₃)	2,100	1,050	967	2,670	261	963	874
Hardness, noncarbonate (as CaCO ₃)	1,860	741	671	--	0.0	592	--
Alkalinity (as CaCO ₃)	242	311	296	--	326	222	--
Solids, dissolved, residue at 180°C	3,560	3,770	2,780	4,500	521	2,920	2,270
Solids, dissolved, sum of constituents	3,170	3,510	2,560	--	518	2,630	--
Calcium, dissolved	510	280	228	337	38	155	83
Magnesium, dissolved	202	86	92	445	41	140	162
Sodium, dissolved	170	750	469	--	85	500	--
Sodium, percent	15	60	52	--	41	53	--
Sodium-adsorption ratio	1.61	10.1	6.46	--	2.29	7.01	--
Potassium, dissolved	12	15	6.3	--	3.6	11	--
Bicarbonate	295	379	361	--	398	452	--
Carbonate	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sulfate, dissolved	2,010	1,540	1,510	2,600	112	1,300	1,130
Chloride, dissolved	86	620	64	65	13	240	107
Fluoride, dissolved	0.8	1.2	.55	--	1.0	1.2	--
Silica, dissolved	19.4	26	--	--	25.8	27.7	--
Nitrogen, nitrate, dissolved (as N)	0.11	0.70	ND	27.1	0.68	7.1	0.25
Nitrogen, nitrate, dissolved (as NO ₃)	0.5	3.1	ND	120	3.0	31.6	1.1
Arsenic (µg/L)	--	--	⁹ <10	--	--	--	--
Boron, dissolved (µg/L)	260	1,830	--	--	180	840	--
Iron, dissolved (µg/L)	5,460	30	8,400	<5	40	190	<5
Manganese, dissolved (µg/L)	6,800	20	550	<5	<5	<5	<5
Selenium, dissolved (µg/L)	<5	<5	⁹ 4.6	--	<5	20	--
Sodium carbonate, residual (as CaCO ₃)	0.00	0.00	0.00	--	1.21	0.00	--

¹Analysis by U.S. Geological Survey laboratory.

²Analysis by South Dakota Department of Health, Pierre, except as indicated.

³Well can go dry for extended periods. Known to have been dry in late summer and fall of 1967.

⁴Well in Lower Brule town park.

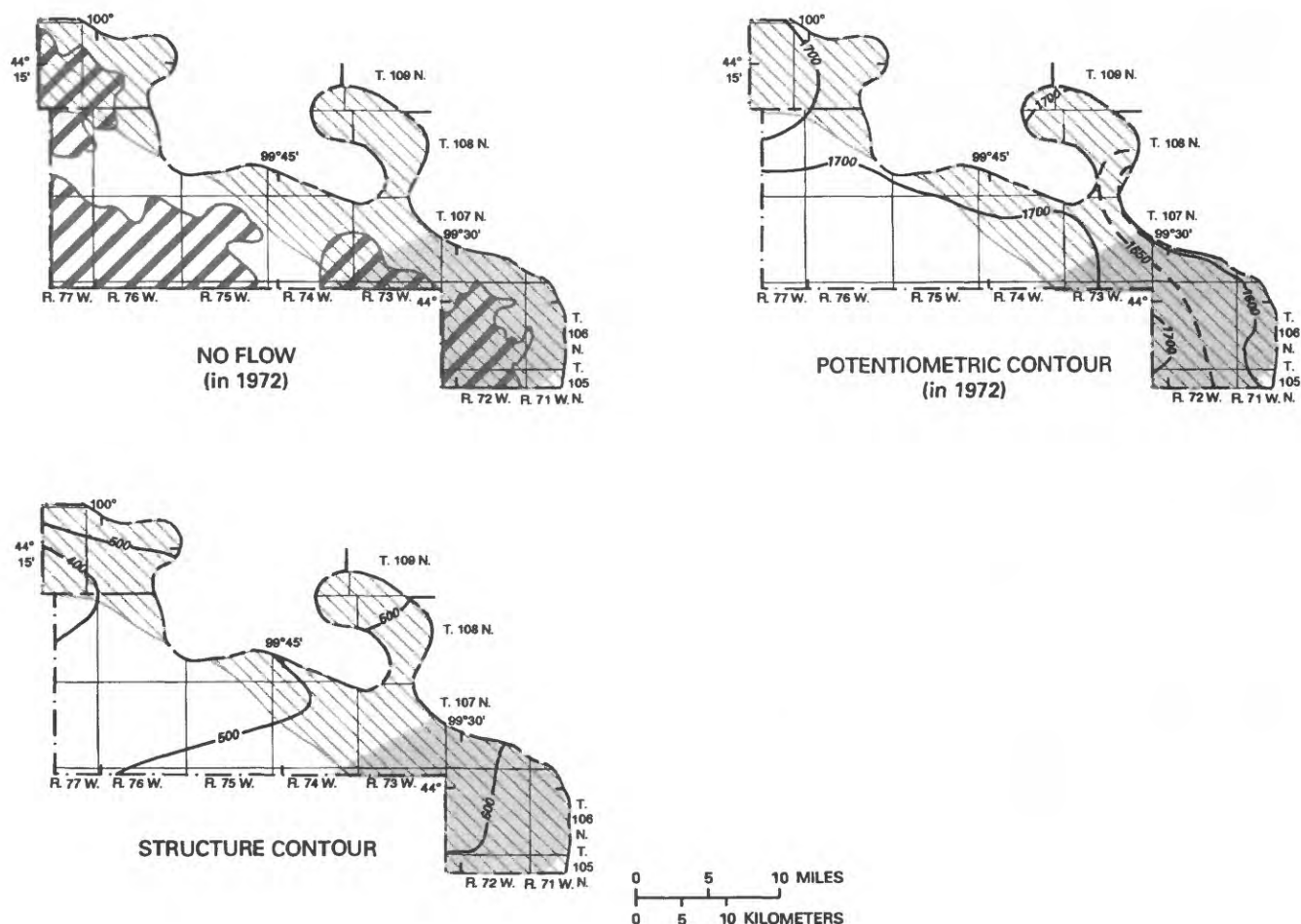
⁵Analysis by U.S. Corps of Engineers laboratory, Omaha, Nebr.

⁶Iron Nation campground well #1.

⁷Developed spring.

⁸Cedar Creek campground.

⁹Analysis by South Dakota Water Resources Institute Laboratory, Brookings.



EXPLANATION






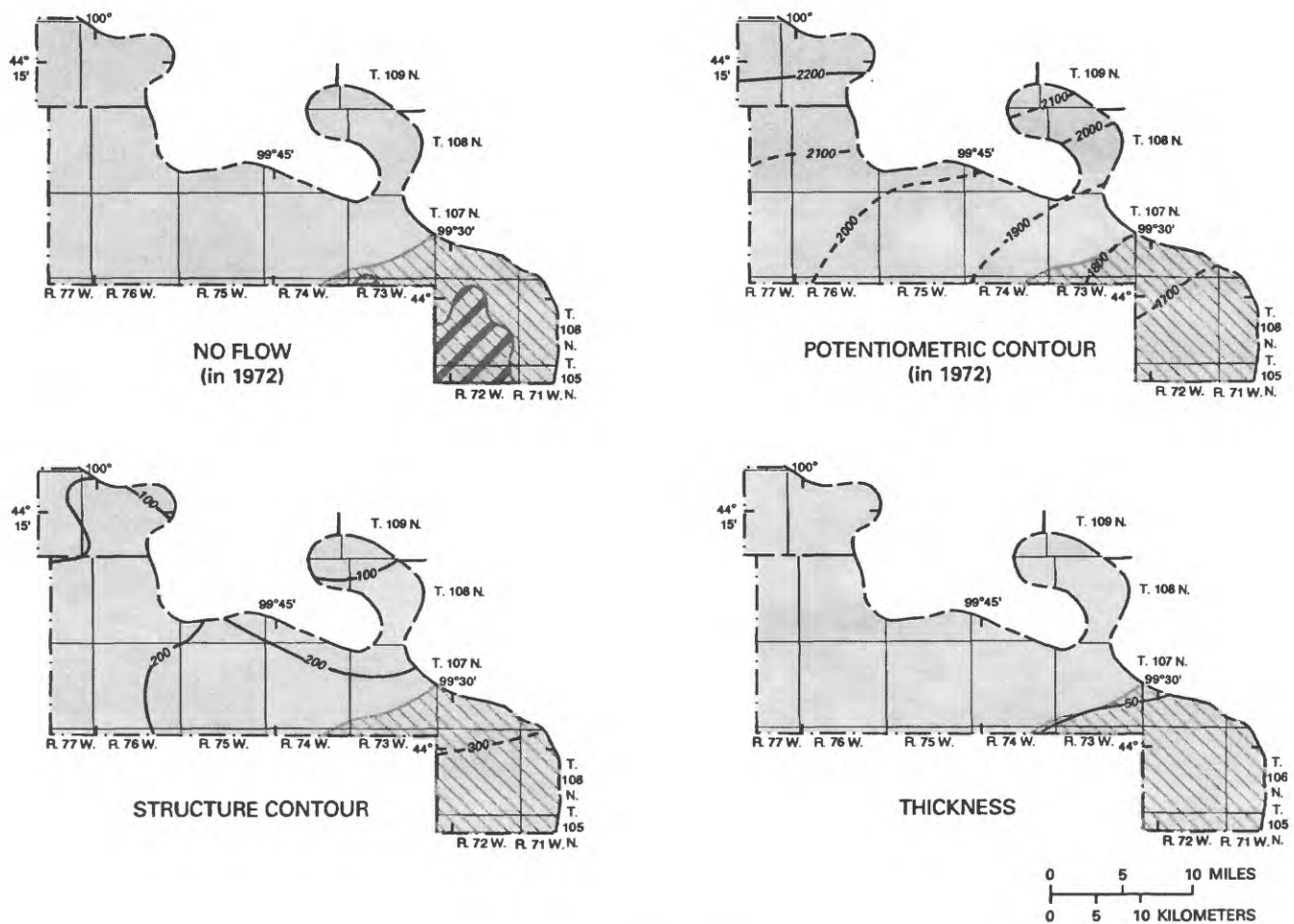
-  AREA WHERE GRANEROS SHALE MAY CONTAIN AN AQUIFER AT OR NEAR THE BASE PROBABLY RECHARGED FROM THE DAKOTA SANDSTONE
-  AREA WHERE AQUIFER IN THE DAKOTA SANDSTONE PROBABLY IS IN CONTACT WITH UNDERLYING AQUIFERS
-  NO FLOW--Approximate area where wells tapping the Dakota Sandstone did not flow
-  1800 --- POTENTIOMETRIC CONTOUR--Shows the altitude at which water level would have stood in tightly cased wells completed in the Dakota Sandstone. Dashed where approximately located. Contour interval 50 feet. Datum is sea level.
-  500 --- STRUCTURE CONTOUR--Shows altitude of top of the Dakota Sandstone. Contour interval 100 feet. Datum is sea level.

Figure 8. Hydrogeology of the Dakota Sandstone on the Lower Brule Indian Reservation (modified from Howells, 1974).



EXPLANATION







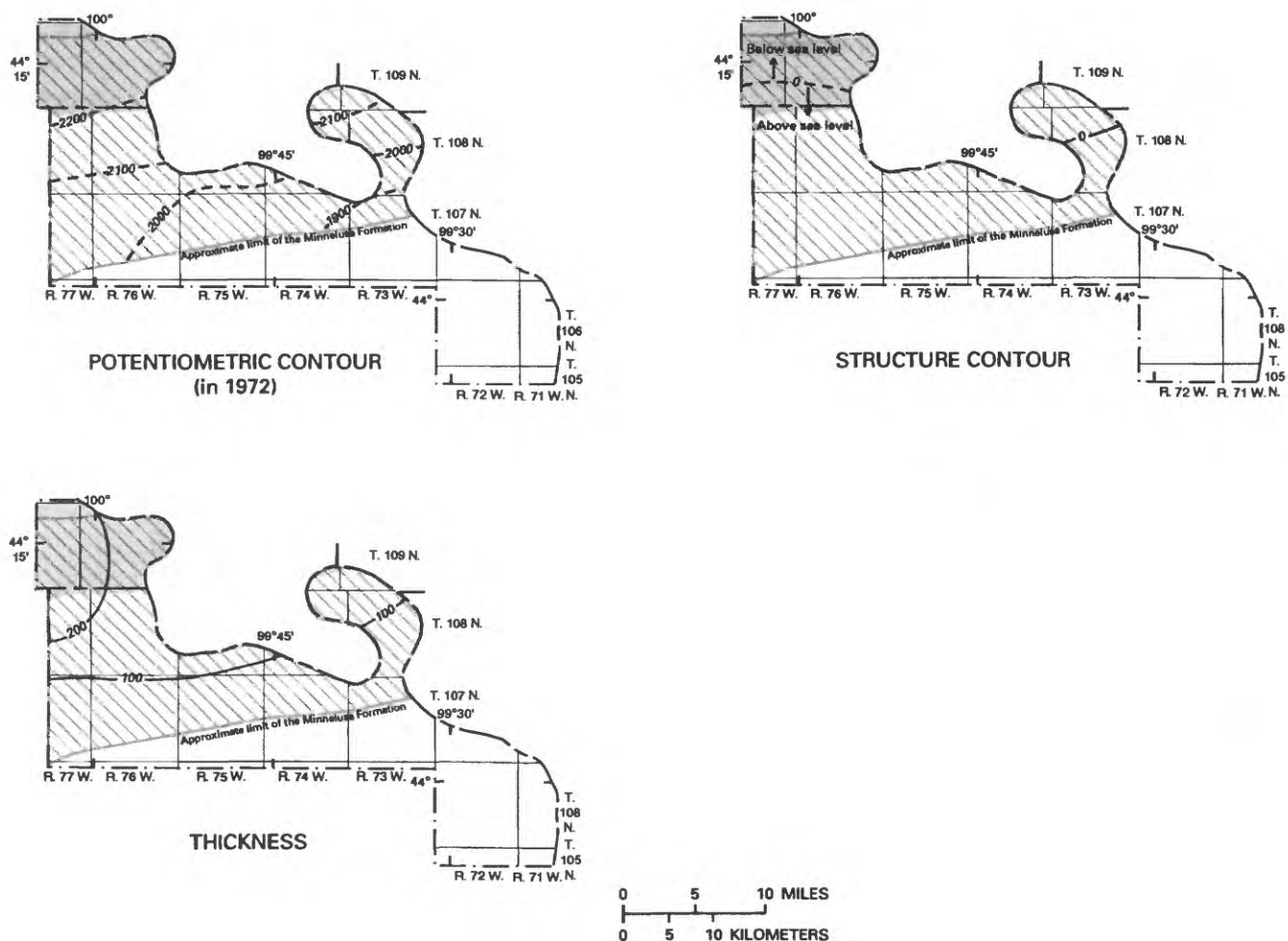
-  AREA WHERE AQUIFER IN THE INYAN KARA GROUP PROBABLY IS IN CONTACT WITH AQUIFER(S) IN OVERLYING FORMATIONS
-  AREA WHERE AQUIFER IN THE INYAN KARA GROUP PROBABLY IS IN CONTACT WITH UNDERLYING AQUIFERS
-  NO FLOW--Approximate area where wells tapping the Inyan Kara Group did not flow
-  1700-- POTENTIOMETRIC CONTOUR--Shows the altitude at which water level would have stood in tightly cased wells completed in the Inyan Kara Group. Dashed where approximately located. Contour interval 100 feet. Datum is sea level.
-  300-- STRUCTURE CONTOUR--Shows altitude of top of the Inyan Kara Group. Dashed where approximately located. Contour interval 100 feet. Datum is sea level.
-  50 -- LINE OF EQUAL THICKNESS, IN FEET

Figure 9. Hydrogeology of the Inyan Kara Group on the Lower Brule Indian Reservation (modified from Howells, 1974).



EXPLANATION



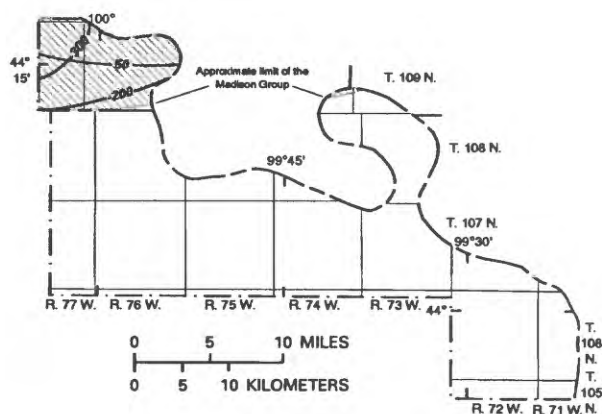
-  AREA WHERE AQUIFER IN MINNELUSA FORMATION PROBABLY IS IN CONTACT WITH AQUIFER(S) IN OVERLYING FORMATION
-  AREA WHERE AQUIFER IN THE MINNELUSA FORMATION PROBABLY IS IN CONTACT WITH UNDERLYING FORMATIONS
- 2000 -- POTENTIOMETRIC CONTOUR--Shows the approximate altitude at which water level would have stood in tightly cased wells completed in the Minnelusa Formation. Contour interval 100 feet. Datum is sea level.
- 0 -- STRUCTURE CONTOUR--Shows altitude of top of the Minnelusa Formation. Contour interval 100 feet. Datum is sea level.
- 100 -- LINE OF EQUAL THICKNESS--Interval 100 feet

Figure 10. Hydrogeology of the Minnelusa Formation on the Lower Brule Indian Reservation (modified from Howells, 1974).



EXPLANATION




-  AREA WHERE AQUIFER IN MADISON GROUP PROBABLY IS IN CONTACT WITH AQUIFER(S) IN OVERLYING FORMATIONS
-  -200 STRUCTURE CONTOUR--Shows altitude of top of the Madison Group. Contour interval 100 feet. Datum is sea level.
-  -50 LINE OF EQUAL THICKNESS, IN FEET

Figure 11. Hydrogeology of the Madison Group on the Lower Brule Indian Reservation (modified from Howells, 1974).

The geochemistry of water in the Dakota Sandstone appears to be complex. Within or near the reservation, wells tapping the Dakota may yield sodium chloride, sodium bicarbonate, or calcium magnesium sulfate type water. Between the regions where each of these types of water predominates are areas of mixed water types such as sodium sulfate or sodium chloride bicarbonate and others. The chemical data also indicate that the Dakota is receiving major recharge where it is in hydraulic contact with underlying aquifers. Calcium magnesium sulfate type water occupies a larger proportion of the basal one-third of the formation than in the top one-third, a natural consequence of its movement into the Dakota from below (fig. 13). Also, the pattern of major-ion distribution generally parallels the area where the aquifer in the Dakota is in contact with underlying aquifers. The source of predominantly sodium bicarbonate type water, present in the Dakota a few miles west of the Lower Brule Reservation, is unknown (L.W. Howells, USGS, oral commun., 1994). Sodium chloride type water probably is connate (trapped in the Dakota when the formation was deposited).

The proportion of the Dakota Sandstone that yields calcium magnesium sulfate type water probably is increasing. As sodium chloride or sodium bicarbonate type water is withdrawn by wells, recharge is increased from underlying aquifers (L.W. Howells, USGS, oral commun., 1994). Some wells in central South Dakota have shown large changes in water quality over the years. Commonly, these changes have been increases in the proportion of calcium, magnesium, and sulfate.

Aquifers deeper than the Dakota beneath the reservation generally contain extremely hard, moderately

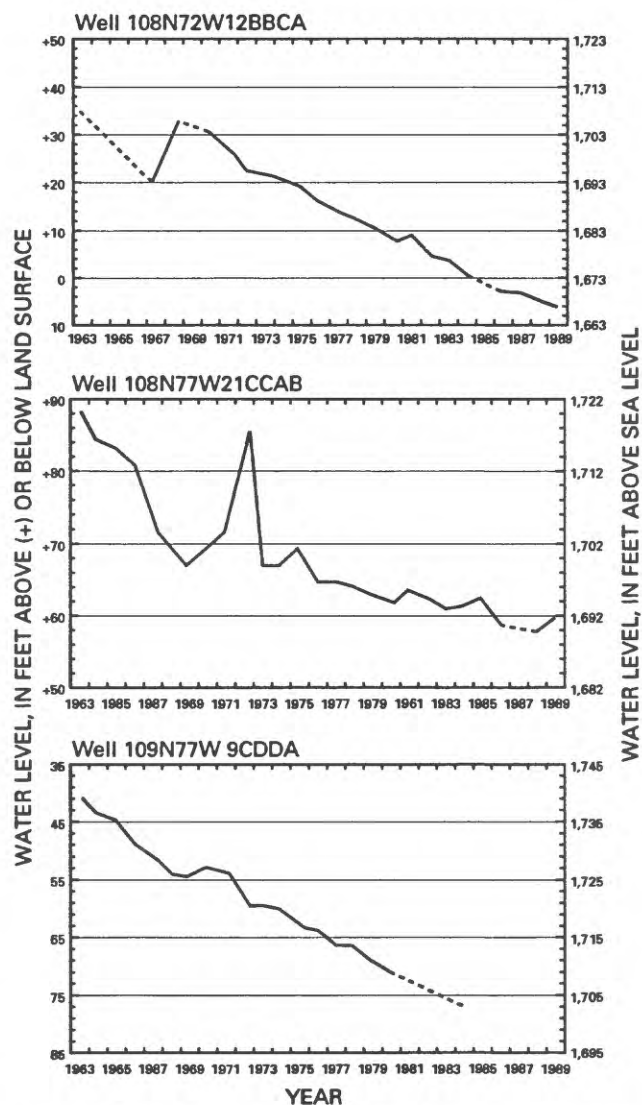


Figure 12. Hydrographs of water levels in wells completed in the Dakota Sandstone (from Winter, 1994; dashed where time between water-level measurements is greater than 1 year).

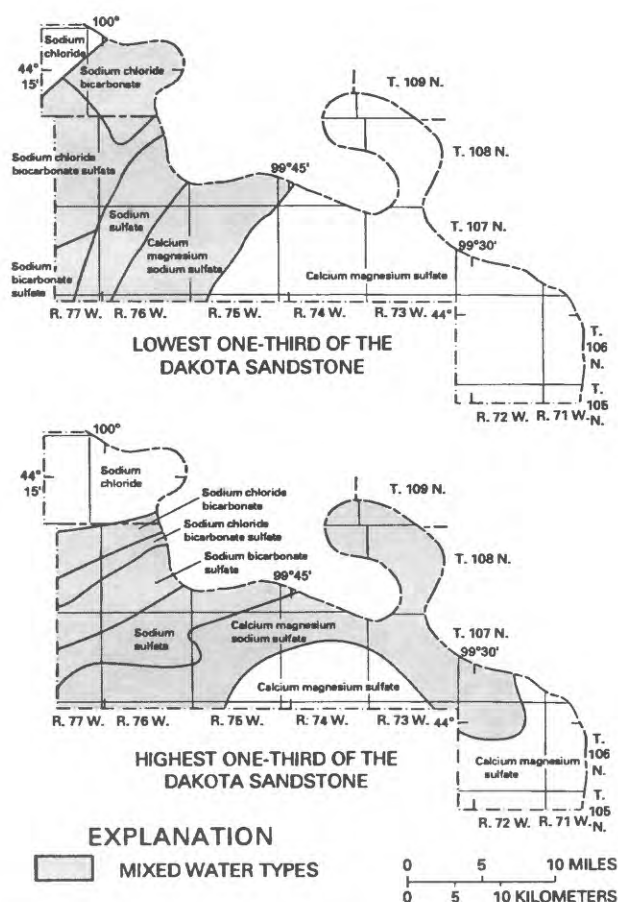


Figure 13. Water types in the Dakota Sandstone on the Lower Brule Indian Reservation as of 1972 (modified from Howells, 1974).

saline, calcium magnesium sulfate type water. Specific conductance ranges from about 2,200 to 2,600 $\mu\text{S}/\text{cm}$, hardness ranges from about 1,200 to more than 1,400 mg/L, sulfate concentration ranges from 1,200 to 1,500 mg/L, fluoride concentration is more than 2.8 mg/L, nitrate (as N) concentration is less than 1 mg/L, and boron concentration usually is less than 250 $\mu\text{g}/\text{L}$ (U.S. Geological Survey, unpub. data).

Well Inventory

During the summer and fall of 1992, a well inventory was made on the Lower Brule Reservation. The purpose of the inventory was to document the location, condition, and use of water from wells located within the boundaries of the reservation. Of the 287 wells on the reservation listed in the USGS data base, 95 percent were visited by USGS personnel.

Well owners were asked for the age and depth of the well, the use of the water, the drilling company, a copy of the driller's log if available, permission to sample the water, and permission to measure the depth to water if the well was not flowing. Wells that had been destroyed, were unusable, or abandoned were noted. Forty-five of the 287 wells had been, or were reported to have been, destroyed or abandoned and another 103 were test holes that had never been completed as wells. Therefore, the USGS ground-water data base lists 139 wells in use, or in usable condition, on the reservation. Of these, 101 were in use in 1992.

The wells and test holes are numbered according to a system based on the Federal land survey for eastern South Dakota (see p. vi). The locations of the 139 usable wells on the Lower Brule Reservation in 1992 are shown in figure 14. The owner(s), locations, and other information for those wells are presented in table 12.

Ground-water-quality samples were taken where feasible. Field water-quality analyses for those wells are shown in table 13. Comparing the data in table 13 to the EPA drinking-water regulations in table 7 shows that one well (located in 108-76-8AABC) had a chloride concentration that exceeded the SMCL of 250 mg/L, and one well (located in 106-72-26BCCA) had a pH value outside the SMCL range of 6.5 to 8.5.

INDIAN WATER RIGHTS

Indian water rights have evolved from the Winters Doctrine (Winters v. United States, 207 U.S. 564, 1908) (Foster, 1978). In a historic Supreme court decision, it was held that, when Indian reservations were established, the Federal Government also reserved the water necessary to make the land productive. States could not appropriate such water to other users. The court held that the amount of water reserved for Indian use was that amount sufficient to irrigate all the practically arable reservation land. Although Winters v. United States was specifically applied to surface water, the Supreme Court also addressed the issue with regard to ground water (Cappaert v. United States, 426 U.S. 128, 1976). Water-resources management in the United States can be complicated, especially in the West, where water shortages are common.

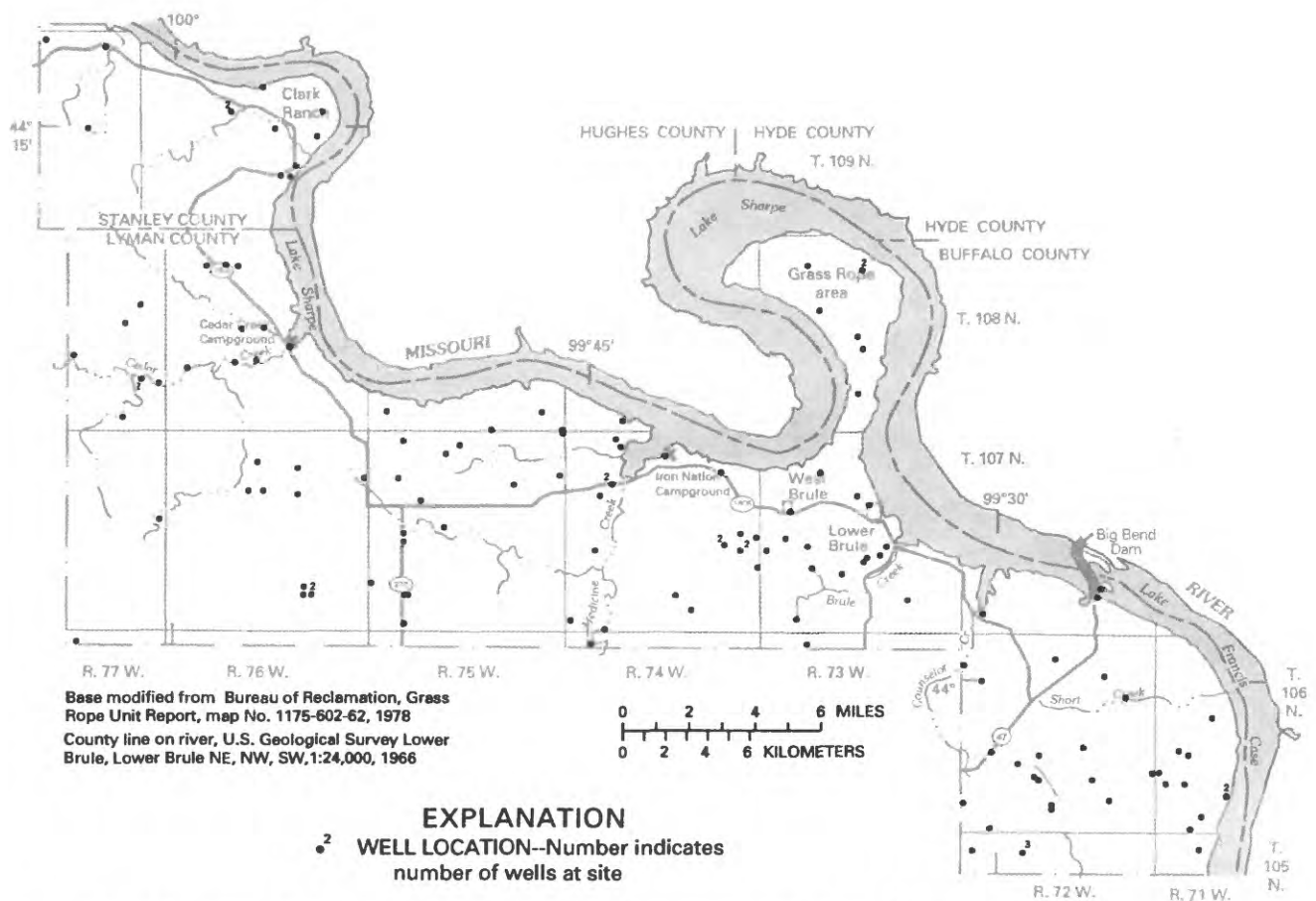


Figure 14. Locations of usable wells on the Lower Brule Indian Reservation as of 1992.

In January 1993, the Mni Sose Intertribal Water Rights Coalition was formed. The coalition is a board whose members are representatives of 22 of the 28 tribes in the Missouri River Basin, including the Lower Brule Sioux Tribe. The primary purpose of the Mni Sose Coalition is to educate its membership about the nature, character, and extent of water issues pertinent to American Indians. The Winters Doctrine reserved Indian rights to the use of water from the Missouri River and tributary streams, and ground water that underlies, borders, or traverses reservations. The coalition will assist member tribes in developing plans to protect, preserve, utilize, administer, manage, and develop their water resources for the economic and social benefit of all tribal members. Currently, the coalition is working to develop a policy statement that defines the Federal Government's role in Indian water issues.

South Dakota Codified Law (SDCL) 46-1-3 declares that all water within the State is the property of the people of the State, but the right to the use of water may be acquired by appropriation as provided by law. SDCL 46-2-11 vests the authority to regulate and control the development, conservation, and allotment of waters of the State with the Water Management Board. However, the question as to who (the State of South Dakota, Federal Government, or Indian Tribes) has the authority to issue and enforce water rights on Tribal and individual allotted trust lands in South Dakota remains unanswered. A water right, as defined by South Dakota Water Law, is not legal title to the water, but the legal right to use it in a manner specified by State law. Permits are issued according to the procedures established by the delegated permit authority. The Lower Brule Sioux Tribe does not necessarily concur with the State's

Table 12. Usable wells on the Lower Brule Indian Reservation, 1992

[Not included are any wells found, or reported, to be unable to produce water. --, no data; >, greater than]

Owner	Well number	Latitude/ longitude	Primary use of water reported in 1992	Depth of well (feet)	Geologic unit(s) in which well is completed ¹
Bart Blum	105-71- 5CABB	4355240992252	Domestic	725	Graneros and Dakota
John Christenson	105-72- 5DADA	4355330993000	Domestic	23	Pierre
John Christenson	105-72- 5DADB	4355300992915	Unused	--	--
John Christenson	105-72- 5DADD	4355320992910	Unused	1,360	Dakota
Frank Woster	105-72- 6CA	4355360993111	Domestic	1,280	Dakota (and Graneros ²)
Lawrence Thompson	106-71-17DBAA	4359030992217	Domestic	850	Graneros (and Dakota ²)
L. Thompson	106-71-19DABD	4358080992320	Unused	916	Dakota
C. Baker	106-71-20CBCB	4358070992307	Domestic	--	--
Brule Cattle Company	106-71-28CCDB	4356590992144	Stock	829	Dakota
City of Lower Brule	106-71-28CD	4357020992132	Unused	760	Dakota (and Graneros ²)
Brule Cattle Company	106-71-30BBCD	4357350992405	Unused	973	Dakota
Theodore Bolman	106-71-30CABA	4357190992356	Domestic	946	Dakota
Keith Johnson	106-71-30DAAB	4357220992312	Domestic	--	Dakota ²
Lawrence Thompson	106-71-32CAA	4356240992236	Domestic	715	Graneros (and Dakota ²)
Richard Menzie	106-71-32CCCD	4356070992300	Domestic	--	Dakota ²
R. Jandreau	106-72- 4DDAD	4400320992759	Domestic	1,310	Dakota
M. Karlen, Jr.	106-72- 6CCCA	4400280993127	Stock	1,000	Dakota
Brule Cattle Company	106-72- 7ACDB	4400030993047	Stock	1,068	Dakota
C. Thompson	106-72-11BDAA	4400080992613	Unused	1,015	Dakota
C. Thompson	106-72-12CC	4359370992523	Stock	890	Dakota
Frank and Selma Bunker	106-72-19DAAD	4358130993029	Unused	1,275	Dakota
Frank and Selma Bunker	106-72-20DDCB2	4357540992925	Unused	1,400	Dakota
Frank and Selma Bunker	106-72-21CADC	4358150992845	Domestic	1,270	Dakota
Tom Wilmot	106-72-22ADCD	4358160992657	Stock	³ 1,000	--
Theodore Bolman	106-72-25AAD	4357380992425	Stock	--	Dakota ²
Tom Wilmot	106-72-26BCCA	4357260992640	Stock	1,360	Dakota
Lower Brule Cattle Association	106-72-28BDBD	4357260992839	--	973	Graneros
John Bunker	106-72-28BDDD2	4357250992807	Domestic	1,440	Dakota
Larry Larson	106-72-31BBBB	4356590993136	Domestic	1,300	Dakota
Clarence Thompson, Jr.	106-72-31DDDC	4356050992313	Domestic	--	Dakota ²
John Bunker	106-72-33AACA	4356470992808	Unused	1,350	Dakota
John Bunker	106-72-33ADBC	4356470992806	Domestic	1,275	Dakota
G. Williams	106-72-35ABB	4356520992604	Unused	³ 1,000	Dakota and/or Graneros
L.C. Knutsen	106-73- 5BCDA	4400550993716	Domestic	19	Pierre
J. Ireland	106-74- 6ACAD	4400580994503	Stock	1,100	Dakota
C.F. Taylor	106-77- 3BDD	4401051000339	Stock	1,473	Dakota
U.S. Army Corps of Engineers	107-72-26CADB	4402260992618	Public supply	46	Alluvium

Table 12. Usable wells on the Lower Brule Indian Reservation, 1992—Continued

Owner	Well number (see page 10)	Latitude/ longitude	Primary use of water reported in 1992	Depth of well (feet)	Geologic unit(s) in which well is completed ¹
U.S. Army Corps of Engineers	107-72-26CDCB	4402130992627	Public supply	--	Alluvium
U.S. Army Corps of Engineers	107-72-31ACD	4401460993045	Public supply	36	Alluvium
Merrill Karlen	107-73- 8AACA	4405330993637	Stock	1,220	Dakota
Ken Harmon	107-73- 9DDDB	4404490993514	Unused	--	Dakota and/or Graneros
Lower Brule Agency	107-73-15BBD	4404390993500	--	894	Dakota and Graneros
Lower Brule (community well)	107-73-18AD	4404260993746	Public supply	1,410	Dakota
Lower Brule Sioux Tribe Boy's Ranch	107-73-19AACC	4403410993745	--	1,474	Inyan Kara and Dakota
Hugh Wynia	107-73-19CBAA2	4403250993830	Domestic	1,300	Dakota
Fred Reuer	107-73-20BDDDB	4403380993702	Stock	1,236	Dakota
Lower Brule (city park)	107-73-22ADCC2	4403280993410	Public supply	45	Alluvium
Boyd Gourneau	107-73-22CCAC	4403070993455	Domestic	--	--
Lower Brule Tribe	107-73-22CCCC	4403020993504	Stock	--	Dakota ²
Orville Langdeaux	107-73-22DBCC	4403150993428	Domestic	1,030	Dakota
Wesley Moore	107-73-28BDAC	4402430993550	Unused	1,240	Dakota
A. Zeigler	107-73-29ABBC	4402550993653	Unused	1,240	Dakota
Alfred Zeigler	107-73-32CBCC	4401310993730	Domestic	1,355	Dakota
Boyd Gourneau	107-73-35BAAB	4402070993326	Stock	1,385	Dakota
U.S. Army Corps of Engineers	107-74- 3CBCB	4405550994217	Public supply	22	Alluvium
Lillian White	107-74- 5ABCB	4406200994403	Domestic	6	Alluvium
George Christensen	107-74- 5ACDC	4406040994356	Domestic	960	Dakota
Earl Christensen	107-74- 8CAAA	4405100994410	Domestic	65	Alluvium
Merrill Karlen	107-74- 8CA	4405040994416	Unused	--	--
Merrill Karlen	107-74- 8CC	4404510994435	Stock	1,100	Dakota
Andrew Estes	107-74-11AACB	4405290994007	Unused	120	Pierre
Lower Brule Sioux Tribe	107-74-19DAAA	4403250994446	Stock	--	--
Berwin Svoboda	107-74-23AD	4403340994002	--	--	--
B. Svoboda	107-74-23ADDB	4403320994002	Stock	1,270	Dakota
Frederick La Roche	107-74-24AADC	4403430993848	Stock	1,196	Dakota (and Graneros ²)
Jiggs Thompson	107-74-24BA	4403280993917	Domestic	1,180	Graneros (and Dakota ²)
Jandreau brothers	107-74-24CAAC	4403220993925	Stock	³ 1,100	Dakota (and/or Graneros ²)
Jandreau brothers	107-74-24CAAC2	4403220993925	Stock	--	Dakota
Merrill Karlen	107-74-25AA	4402550993851	Domestic	1,147	Graneros
J.W. Thompson	107-74-27CDDC	4402100994150	Stock	--	Dakota ²
Medicine Creek Grazing Association	107-74-31CBDC	4401310994544	Stock	³ 1,100	Dakota
Medicine Creek Grazing Association	107-74-32CCD	4401230994430	Domestic	1,100	Dakota
Jandreau brothers	107-74-34AD	4401490994116	--	1,080	Graneros
Medicine Creek Grazing Association	107-75- 1AAAA	4406260994557	Stock	³ 1,000	Dakota and/or Graneros

Table 12. Usable wells on the Lower Brule Indian Reservation, 1992—Continued

Owner	Well number (see page 10)	Latitude/ longitude	Primary use of water reported in 1992	Depth of well (feet)	Geologic unit(s) in which well is completed ¹
Larry Christian	107-75- 4ADCA	4406080994941	Domestic	1,326	Dakota
Larry Christian	107-75- 4CACA	4405550995019	Stock	--	Dakota or deeper
Alfred Andrew Gus Allen	107-75- 5BCBA	4406140995150	Unused	1,300	Dakota
Gus Allen	107-75- 7ADDB	4405160995202	Unused	1,400	Dakota
Fay Jandreau	107-75-11CAAA	4405090994746	Domestic	1,400	Dakota
F. Jandreau	107-75-12ADBB	4405220994611	Stock	1,300	Dakota
Jerry Ireland	107-75-16CDCA	4403580995019	--	1,500	Inyan Kara (and Dakota ²)
Driving Hawk	107-75-17ABBC	4404410995110	Domestic	1,605	Dakota
Jim Schaefer	107-75-20BBBC	4403430995135	Domestic	1,260	Graneros (and Dakota ²)
Jim Schaefer	107-75-20BCB	4403360995149	Domestic	1,600	Dakota and Inyan Kara
Smith and Smith	107-75-29CCCC	4402100995154	Unused	1,470	Dakota
Wayne Smith	107-75-29CCDB	4402150995200	Domestic	--	Dakota
Keith Dorman	107-75-30CBBD2	4402350995305	Stock	1,473	Dakota
Will Gorman	107-75-32CCBD	4401240995149	--	1,430	Dakota
Mike Jandreau	107-76- 4DCCD	4405430995712	Unused	1,050	Graneros
Mike Jandreau	107-76- 9CDAC	4404520995727	Domestic	1,367	Dakota
Mike Jandreau	107-76- 9DDAB	4405000995647	Domestic	1,335	Dakota
D. Gifford	107-76-10AA	4405300995540	--	1,100	Dakota and/or Graneros
Sharon Brown	107-76-10DD	4404230995536	Domestic	1,410	Dakota
Dallas Gifford	107-76-12AD	4405170995316	Unused	--	Dakota ²
Roscoe Huston	107-76-26CBCB2	4402330995530	Domestic	1,640	Dakota
R. Huston	107-76-26CCCC	4402090995529	Stock	1,440	Dakota and Graneros
R. Huston	107-76-26CDCD	4402090995506	Unused	1,400	Graneros
Huston brothers	107-76-26CDCD2	4402100995507	Domestic	1,603	Dakota
Patricia Madsen	107-77-13DAAC	4404141000024	Domestic	1,400	Dakota and Graneros
Lower Brule	108-73- 5CDDD	4411030993642	Domestic	90	Alluvium
J. Thompson	108-73-10BBBB	4410470993503	Domestic	47	Alluvium
J.W. Thompson	108-73-10BBBB2	4410480993504	--	1,030	Dakota
J. Thompson	108-73-17ADBC	4409390993638	Stock	980	Dakota and/or Graneros
Delmar Smith	108-73-21AAAA	4409030993510	Irrigation	1,200	Dakota
Lyle Peterson	108-73-22BCCA	4408440993500	Domestic	1,175	Dakota
U.S. Government	108-73-28DDAD	4407300993509	Unused	--	Dakota and/or Graneros
Gillman Farms	108-74-32DACD	4406430994343	Domestic	47	Alluvium ² (or Pierre ²)
Lower Brule Sioux Tribe	108-75-31AC	4407020995223	--	--	--
W.S. Christian	108-75-34DCDD	4406300994838	Stock	1,366	Dakota
Gillman Farms	108-75-36BDCA	4407000994644	Stock	--	--

Table 12. Usable wells on the Lower Brule Indian Reservation, 1992—Continued

Owner	Well number (see page 10)	Latitude/ longitude	Primary use of water reported in 1992	Depth of well (feet)	Geologic unit(s) in which well is completed ¹
Gillman Farms	108-75-36DDDD	4406300994557	Domestic	>1,000	Dakota (and/or Graneros ²)
Lloyd Langdeau	108-76- 8AABC	4410450995809	Domestic	1,550	Dakota
Abe Langdeau	108-76- 8BBAD	4410480995854	Domestic	1,430	Dakota
Lloyd Langdeau	108-76- 9BBAB	4410480995742	Stock	--	Dakota ²
Leslie Langdeau	108-76-16CDCA	4409110995729	Domestic	³ 1,200	Dakota
L. Langdeau	108-76-16DD	4409110995652	Unused	980	Graneros (and Dakota ²)
Charles Langdeau	108-76-21CCCD	4408180995754	Domestic	1,200	Dakota
Vera Gandt	108-76-21DCAD	4408210995705	Domestic	1,100	Dakota
U.S. Army Corps of Engineers	108-76-22ACDB	4408440995557	Public supply	28	Alluvium
Pauline Middletent	108-76-30ABAD	4408060995930	Domestic	--	Dakota ²
J.B. Howe	108-77-13B	4409451000114	Unused	1,450	Dakota
Pat Durkin Milton Ness	108-77-14D	4409141000143	Stock	1,890	Minnelusa, Sundance, and Inyan Kara
A. Brakke	108-77-22CBDD	4408271000341	Stock	1,300	Dakota
Baunita and Bart Ness	108-77-25BDCB	4407531000114	Stock	1,300	Dakota
Andrew Brakke	108-77-25BDCB2	4408231000332	Stock	--	Graneros and/or Dakota ²
Baunita Ness	108-77-25DABB	4407461000036	Domestic	1,300	Dakota
Leslie N. Langdeau	108-77-35DBAD	4406501000153	Unused	--	Dakota ²
Clark Ranch Lower Brule Sioux Tribe	109-76-10DBDA	4415290995655	Unused	--	Dakota ²
Clark Ranch Lower Brule Sioux Tribe	109-76-13ACCC	4414460995444	Unused	80	Alluvium
Betty Durkin	109-76-14CCC	4413290995643	Domestic	1,093	Dakota (and/or Graneros ²)
Clark Ranch Lower Brule Sioux Tribe	109-76-16ACDB	4414490995810	Unused	>1,000	Dakota
Clark Ranch Lower Brule Sioux Tribe	109-76-16ACDB2	4414480995812	Stock	>1,000	Graneros
Sally Durkin	109-76-24BAD	4414090995450	Unused	80	Alluvium
Clark Ranch Lower Brule Sioux Tribe	109-76-26ABAC	4413570995547	Stock	70	Alluvium
Clark Ranch Lower Brule Sioux Tribe	109-76-26ACCB	4413050995557	Unused	900	Graneros
Clark Ranch Lower Brule Sioux Tribe	109-76-26BDBD	4413080995611	Stock	>1,000	Dakota (and Graneros ²)
Bill Thompson	109-77- 2ADDD	4416301000237	Stock	35	Alluvium
John Ketchen	109-77- 3B	4416391000513	Stock	1,655	Inyan Kara and Sundance (and Minnelusa ²)
W. Thompson	109-77-14CDDD	4414201000315	Stock	1,400	Dakota

¹Determined from interpretation of well logs and/or structure-contour maps.

²Probable unit or possible alternative or additional unit.

³Depth estimated.

Table 13.--Selected field analyses of ground-water samples collected in 1992 from wells on the Lower Brule Indian Reservation[°C, degree Celsius; $\mu\text{S/cm}$, microsiemens per centimeter at 25°C; mg/L, milligram per liter; --, not determined]

Location	Date collected	Geologic unit	Temperature (°C)	Specific conductance ($\mu\text{S/cm}$)	pH	Total hardness (mg/L)	Chloride (mg/L)
105-72- 5DADA	9-16-92	Dakota	--	780	7.7	291	30
105-72- 5DADD	9-16-92	Dakota	--	2,350	7.9	1,215	91
106-71-17DBAA	9-16-92	Graneros (and Dakota ¹)	7.0	2,360	7.6	130	152
106-71-30CABA	8-13-92	Dakota	16.5	2,360	7.3	1,301	91
106-71-32CCCD	9-11-92	Dakota ¹	15.5	2,630	7.7	1,507	91
106-72-21CADC	8-10-92	Dakota	15.5	2,450	6.9	1,387	91
106-72-26BCCA	8-10-92	Dakota	16.5	2,310	4.4	1,301	91
106-72-28BDDD2	8-10-92	Dakota	19.0	2,430	7.1	1,438	91
106-72-33ADBC	8-11-92	Dakota	17	2,540	7.2	1,335	212
107-73-22CCAC	7-24-92	Unknown	17.5	2,730	7.5	410	152
107-73-22CCCC	8-16-92	Dakota	--	2,550	--	--	--
107-73-22DBCC	7-23-92	Dakota	29.5	2,270	7.5	753	121
107-74- 8CAAA	8- 6-92	Alluvium	16.5	1,730	7.4	685	61
107-75- 4ADCA	7-17-92	Dakota	21.1	2,210	7.4	548	121
107-75-20BBBC	7-20-92	Graneros (and Dakota ¹)	22.5	2,160	7.9	702	121
107-75-29CCDB	7-20-92	Dakota	15.0	2,330	7.4	650	200
107-76- 9CDAC	7-15-92	Dakota	28.0	2,340	7.6	257	152
108-76- 8AABC	7-17-92	Dakota	14.5	2,230	6.9	--	334
108-76-16CDCA	7- 8-92	Dakota	26.2	2,260	7.4	--	182
108-76-21CCCD	7- 8-92	Dakota	20.0	2,650	7.3	171	243
108-76-21DCAD	7- 2-92	Dakota	19.5	2,450	7.5	--	152
108-76-30ABAD	8-24-92	Dakota ¹	21.2	2,230	7.8	223	152
108-77-25DABB	7- 8-92	Dakota	18.3	2,200	7.5	--	182

¹Probable unit or possible alternative or additional unit.

declared ownership of ground water or surface water, nor with the State's authority to control the development or use of either ground-water or surface-water resources within the reservation (M.B. Jandreau, Tribal Chairman, Lower Brule Sioux Tribe, oral commun., February 1995).

The Water Rights Division of the South Dakota Department of Environment and Natural Resources (DENR) has issued several water rights (water use) permits (non-tribal) on deeded land within the Lower Brule Indian Reservation boundaries. When a State water right application is made, the Office of the Solicitor, U.S. Department of the Interior, on behalf of

the Lower Brule Sioux Tribe, normally sends a letter of disclaimer to the DENR stating their objection to the issuance of a permit. The letter also states that by filing each objection, they do not waive their right to challenge State jurisdiction in the matter (J.A. Goodman, DENR, written commun., February 1995).

Permittees are required to report annually the amount of water used for the use specified in the permit. These annual-use values are maintained by the DENR in a data base. Because no permits are issued by the State for tribal entities, no values are reported to the DENR by the Lower Brule Sioux Tribe.

WATER USE

A public water system supplies Missouri River water to the towns of Lower Brule and West Brule and to residences along the highway that connects these towns. The average usage during 1992 was 130,000 to 140,000 gallons per day, based on records maintained by the manager of the system. The primary uses of ground water on the reservation were given in table 12; however, the amount of use is not known. Irrigation constitutes most of the water use on the Lower Brule Reservation. In 1990, slightly more than 17,000 acre-feet was used to irrigate land within the reservation (table 14). Usage data for various water-use categories are maintained by the USGS in its Water-Use Data System (WUDS).

SUMMARY

The Lower Brule Indian Reservation covers an area of about 404 square miles, about 35 square miles of which are covered by major reservoirs on the Missouri River. Of the remaining 369 square miles of land, about 201 square miles are tribal and other Indian-owned land. Agriculture, primarily livestock production and crop production, is the major industry. In 1992, about 5,900 acres were irrigated by the Tribe. In addition, there were about 3,800 acres of other land within the reservation boundary either under irrigation or for which State permits for irrigation had been issued.

Inflow of the Missouri River to the Lower Brule Indian Reservation during 1968-92 is estimated to have averaged 18,290,000 acre-feet per year. Average runoff to the Missouri River in the reach adjacent to the reservation is estimated to be 64,000 acre feet per year. Diversions from the Missouri River within the reach are estimated to be 43,000 acre feet (based on 1990 usage). Net evaporation from the Missouri River reservoirs (Lakes Sharpe and Frances Case) in the reach adjacent to the reservation is estimated to average 146,000 acre-feet per year. From this, average outflow of the Missouri River from the reservation is estimated to be 18,165,000 acre-feet per year. Lakes Sharpe and Francis Case normally store about 5 million acre-feet of water. Precipitation on the land area of the reservation averages about 17.4 inches per year. Evapotranspiration from the

land surface of the reservation averages about 17.5 inches.

Upstream reservoirs on the Missouri River normally store about 51.9 million acre-feet and stabilize water quality. Dissolved-solids concentration of Missouri River reservoir water available to the reservation averages about 500 mg/L. The total discharge to the Missouri River reservoirs from all streams on the reservation, which are ephemeral, averages about 26,000 acre-feet per year. The USGS water-quality data base contains data for two samples taken from streams in 1971.

Stock ponds and dugouts are a major source of water for livestock on the reservation. In 1993, 593 stock ponds and dugouts, with a total area of more than 1,300 acres, were in use or were in repairable condition. Almost all such impoundments go dry by late summer and during droughts. Based on visits to about 10 percent of the ponds, approximately 75 percent were dry, overgrown with vegetation, badly silted in, had breached or leaky dams, or were otherwise not in good condition. Like streamflow, the quality of water in stock ponds probably varies widely during the year, depending on dilution by runoff, concentration of salts by evaporation, and influshing of soluble minerals and organic matter.

Shallow ground-water supplies are limited to alluvial deposits along major streams and to terrace deposits where they extend below the water level of the Missouri River reservoirs. Where such water supplies have been in contact with the Pierre Shale, the dissolved-solids concentration can exceed 4,000 mg/L.

Most ground water on the Lower Brule Reservation is obtained from deep, artesian aquifers in the bedrock, usually the Dakota Sandstone, although a few wells tap deeper aquifers. Dissolved-solids concentrations in water from the Dakota Sandstone commonly are from 2,000 to 3,000 mg/L; the water is of sodium chloride, sodium sulfate, or calcium magnesium sulfate type. From the well inventory, 139 wells in usable condition were identified; of these, 101 were in use.

Federal law and court decisions support the concept that Indian reservations have reserved for

Table 14.--Surface-water use for irrigation on the Lower Brule Indian Reservation

[Source: U.S. Geological Survey water-use data base. ft³/s, cubic foot per second. Water source: M, Missouri River; D, dam and reservoir on a minor stream. --, no data]

Operator	Location	Permit no.	Acres under permit	Permitted rate of use (ft ³ /s)	Water source	Total volume used (reported), in acre-feet, by year									
						1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Lower Brule Sioux Tribe	Grass Rope Unit	--	--	--	M	--	--	--	5,500	--	--	--	--	8,075	--
Lower Brule Sioux Tribe	Clark Ranch	--	--	--	M	--	--	--	2,000	--	--	--	--	2,629	--
Blum brothers	105-71-6	1366-2	80	1.14	M	38.7	168	--	122	74	166	110	101	57	66
Dorothy Ellis	105-72-11, 12, and 13	1387-2	430	6.14	M	205	144	251	115	480	132	284	60	384	247
Blum brothers	106-71-5 and 6	1273-2	160	2.20	M	24.9	--	--	63	149	91	238	183	65	118
Arnold Lafferty	106-71-20, 21, 28, and 29	1255-2	260	3.71	M	172	150	208	159	359	1,299	414	--	415	415
Arnold Lafferty	106-71-32	1799-2	120	1.71	M	--	--	222	249	230	345	414	415	415	--
Larry Larson	106-72-30	1634-2	72	.43	D	--	--	--	36	47	--	--	--	--	--
South Dakota Department of Game, Fish and Parks	106-72-34	604-2	--	--	D	a maximum of 45 acre-feet per year permitted									
Earl Christensen	107-74-5	918-2	53	.76	M	--	--	88	222	--	104	121	314	1,746	136
Earl Christensen	107-74-7 and 8	1639-2	106	1.50	M	--	334	64	92	136	--	121	439	--	532
Jerry Christensen	107-74-8	1753-2	66	.94	M	31.8	21	14	14	22	22	33.6	--	--	136
Earl Christensen	107-75-4 and 108-75-33 and 34	1742-2	454	6.50	M	1,425	--	184	120	--	--	--	930	--	328
Lyle and Leola Peterson	108-73-15 and 22	896-2	222	3.18	M	2.7	3.0	--	1.0	--	2.0	--	--	--	--
Earl Christensen	108-74-30 and 108-75-25 and 36	919-2	350	5.00	M	--	--	398	222	658	238	485	669	--	548
Lower Brule Farm Corp. (formerly John Urban)	108-74-31	1226-2	435	6.21	M	203	--	552	179	537	--	250.60	210	236	214
Gilman Farms	108-74-32 and 33	964-2	398	5.70	M	--	718	1,353	955	1,230	1,586	1,052	1,291	1,157	1,127
Gilman Farms, Inc.	108-75-36, 108-74-31, and 107-74-6	899-2	557	7.95	M	1,073	1,047	1,743	1,377	662	928	1,814	2,142	1,939	1,888

them all the water needed to make the land productive, including water sufficient to irrigate all potentially arable land. In South Dakota, the State claims ownership of the ground and surface water for the purpose of regulating the development and use of such water. Indian tribes, including the Lower Brule Sioux Tribe, do not necessarily concur that the State owns or controls water within or adjacent to reservation boundaries (in this case, the Missouri River).

Irrigation constitutes most of the water use on the Lower Brule Reservation. In 1990, slightly more than 17,000 acre-feet was used to irrigate land within the reservation.

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SUPPLEMENTAL INFORMATION

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1933 TO SEPTEMBER 1934 DAILY MEAN VALUES												
1	10,800	9,880	13,400	3,800	11,200	33,400	19,500	20,000	24,500	26,200	8,550	5,050
2	10,900	9,920	13,500	4,200	10,800	23,700	18,400	20,000	25,300	24,500	8,150	4,800
3	10,700	10,500	13,400	4,500	10,600	22,400	19,500	19,500	24,500	23,700	7,850	4,600
4	10,500	11,000	13,000	4,600	10,600	21,200	20,000	20,000	23,700	22,400	7,530	4,500
5	10,300	11,000	12,500	4,600	10,600	19,000	19,500	20,600	23,700	21,800	6,950	4,600
6	10,000	11,100	12,200	4,800	10,600	19,500	18,400	23,000	23,000	21,200	6,950	4,500
7	9,880	11,000	11,900	5,000	10,700	19,500	18,400	29,700	23,000	19,500	6,900	4,400
8	9,800	10,300	12,800	5,200	10,700	16,100	26,200	31,500	21,800	18,400	6,900	4,400
9	9,680	9,150	12,000	5,300	10,800	16,100	24,500	28,800	21,200	17,500	6,800	4,400
10	9,680	7,220	10,000	5,400	11,700	17,500	20,000	26,200	21,800	17,000	7,050	4,400
11	9,720	7,040	9,400	5,700	12,500	16,100	17,500	26,200	22,400	16,500	9,250	4,400
12	9,680	6,380	8,000	6,000	13,000	17,500	16,100	25,300	23,000	15,600	9,950	4,500
13	9,840	6,110	7,400	6,300	13,600	17,000	18,400	24,500	22,400	15,200	9,950	4,500
14	9,680	6,520	7,000	6,700	14,300	17,500	21,200	23,000	21,200	13,800	9,250	4,500
15	9,640	8,860	6,600	7,000	15,800	17,900	21,200	23,000	20,600	13,400	8,900	4,600
16	9,640	10,700	6,400	7,400	19,300	18,400	19,500	23,000	21,200	12,900	9,250	4,600
17	9,600	8,720	6,100	7,700	18,300	23,000	18,400	22,400	29,700	12,500	8,900	4,700
18	9,640	20,800	5,900	8,000	17,800	21,200	17,500	26,200	34,400	12,100	8,250	4,900
19	9,680	25,500	5,600	8,200	17,900	16,500	17,000	30,600	44,600	11,700	7,350	4,900
20	9,680	20,900	5,400	8,300	17,000	17,500	17,000	31,500	47,600	11,200	7,050	4,900
21	9,330	17,100	5,100	8,500	15,000	20,600	17,000	28,800	41,800	10,800	6,500	5,000
22	9,260	15,400	4,900	8,600	13,800	37,700	17,000	27,000	32,400	10,800	6,250	5,100
23	9,450	14,500	4,700	8,800	12,800	40,400	17,900	26,200	27,900	10,000	6,000	5,100
24	9,220	14,400	4,500	8,900	10,600	27,900	17,900	26,200	27,900	9,620	5,950	5,000
25	9,370	14,600	4,200	9,100	9,600	23,000	18,400	26,200	29,700	10,000	6,050	5,000
26	9,410	14,700	4,000	9,300	8,700	21,800	18,400	24,500	30,600	9,620	5,700	4,900
27	9,520	15,100	3,900	9,900	8,600	20,600	19,000	23,700	31,500	8,890	5,700	5,000
28	9,760	14,600	3,800	10,200	8,700	17,900	19,500	23,000	30,600	8,890	5,500	5,000
29	9,560	14,000	3,800	10,800	---	19,000	19,500	23,000	28,800	9,620	5,500	5,100
30	9,490	13,800	3,800	11,200	---	17,900	20,000	23,000	27,000	10,000	5,250	5,200
31	9,640	---	3,800	11,300	---	18,400	---	23,700	---	8,890	5,250	---
TOTAL	303,050	370,800	239,000	225,300	355,600	656,200	572,800	770,300	827,800	454,230	225,380	142,550
MEAN	9,776	12,360	7,710	7,268	12,700	21,170	19,090	24,850	27,590	14,650	7,270	4,752
MAX	10,900	25,500	13,500	11,300	19,300	40,400	26,200	31,500	47,600	26,200	9,950	5,200
MIN	9,220	6,110	3,800	3,800	8,600	16,100	16,100	19,500	20,600	8,890	5,250	4,400
AC-FT	601,100	735,500	474,100	446,900	705,300	1,302,000	1,136,000	1,528,000	1,642,000	901,000	447,000	282,700

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1934 TO SEPTEMBER 1935 DAILY MEAN VALUES												
1	5,250	8,100	8,300	5,300	5,400	10,600	13,200	17,600	20,700	60,200	23,900	11,000
2	5,250	8,340	8,000	5,600	5,800	10,400	13,500	16,300	38,900	61,200	24,200	10,600
3	5,250	8,250	6,600	6,000	6,800	10,300	15,000	15,900	77,400	55,200	23,900	10,100
4	5,500	8,370	5,400	6,000	7,000	10,100	15,600	16,500	65,800	48,000	23,900	9,600
5	5,500	8,250	4,500	5,900	6,600	10,000	16,000	17,800	60,200	43,400	23,200	9,600
6	5,500	8,550	3,600	5,800	7,100	9,800	17,700	18,400	48,800	43,400	22,500	9,580
7	6,000	8,550	3,800	5,800	7,600	9,700	19,600	20,000	43,400	42,700	20,600	9,120
8	6,000	9,250	4,000	5,800	8,400	9,700	20,200	19,700	40,000	45,600	19,400	8,790
9	5,950	9,250	4,500	5,800	8,500	9,800	21,200	19,800	48,800	49,600	18,600	8,420
10	6,000	9,250	5,200	5,800	7,500	10,000	23,200	20,100	50,500	48,800	17,000	8,350
11	6,450	9,250	5,400	5,800	6,500	10,200	24,000	19,900	44,900	43,400	1,5600	8,100
12	6,450	9,250	5,200	5,800	6,000	10,500	24,600	19,400	39,300	46,400	14,600	8,000
13	6,950	9,250	4,400	5,500	5,400	10,700	25,600	18,900	35,200	79,800	13,600	7,750
14	7,250	9,250	4,800	5,300	6,000	11,100	26,600	18,400	33,300	127,000	12,400	7,600
15	7,550	9,250	4,900	5,000	6,500	11,500	34,300	17,900	35,800	100,000	11,800	7,800
16	8,150	9,250	5,100	4,800	7,500	11,800	38,400	16,800	37,000	62,300	11,400	7,800
17	8,450	9,250	5,300	4,500	9,000	12,300	37,400	17,500	54,200	49,600	11,000	7,950
18	8,450	9,250	5,400	4,300	10,300	12,700	30,000	17,300	67,800	42,000	10,600	8,100
19	8,880	9,250	5,500	4,100	11,000	13,700	19,900	16,700	82,400	34,300	10,400	8,400
20	10,200	9,250	6,000	3,900	11,800	14,000	15,800	16,300	89,000	30,600	10,300	8,400
21	10,600	9,250	5,500	3,900	11,600	14,500	14,700	18,100	82,400	28,000	10,100	8,400
22	9,950	9,250	5,500	3,900	11,200	14,300	14,100	22,300	79,800	26,400	9,950	8,100
23	9,900	9,250	5,000	4,000	10,400	13,900	13,700	18,700	82,100	25,000	9,420	7,950
24	9,700	9,250	4,400	4,000	9,800	13,300	13,700	18,400	78,600	24,600	8,900	7,950
25	9,340	9,250	4,300	4,000	10,000	12,600	14,500	17,700	73,700	24,600	8,720	7,950
26	8,970	8,900	4,200	4,000	10,200	12,800	18,200	16,700	64,600	26,000	8,550	7,750
27	8,970	8,900	4,000	4,000	10,400	13,900	19,300	16,100	59,200	25,000	8,550	7,590
28	8,340	8,900	4,200	4,100	10,500	13,700	20,400	15,700	57,200	23,600	8,400	7,500
29	8,340	8,800	4,400	4,400	---	13,400	18,200	15,500	58,200	23,200	8,550	7,350
30	8,340	8,700	4,600	4,600	---	13,400	18,200	15,000	57,200	22,500	8,900	7,200
31	8,340	---	4,900	5,000	---	13,300	---	14,800	---	22,800	10,300	---
TOTAL	235,770	269,110	156,900	152,700	234,800	368,000	616,800	550,200	1,706,400	1,385,200	439,240	252,800
MEAN	7,605	8,970	5,061	4,926	8,386	11,870	20,560	17,750	56,880	44,680	14,170	8,427
MAX	10,600	9,250	8,300	6,000	11,800	14,500	38,400	22,300	89,000	127,000	24,200	11,000
MIN	5,250	8,100	3,600	3,900	5,400	9,700	13,200	14,800	20,700	22,500	8,400	7,200
AC-FT	467,600	533,800	311,200	302,900	465,700	729,900	1,223,000	1,091,000	3,385,000	2,748,000	871,200	501,400

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1935 TO SEPTEMBER 1936 DAILY MEAN VALUES												
1	7,500	8,840	6,900	6,800	6,200	5,000	19,400	23,200	33,600	29,600	13,600	9,950
2	7,400	8,720	7,100	6,600	6,300	5,500	18,800	22,700	32,400	28,800	13,000	9,950
3	7,400	8,700	7,200	6,300	6,500	6,500	17,800	22,200	32,000	28,000	12,400	9,950
4	7,400	8,500	7,300	6,000	6,400	7,500	17,300	21,500	31,600	27,600	11,800	10,200
5	7,500	8,300	7,400	5,700	6,300	8,500	16,200	21,800	30,200	26,000	11,000	9,680
6	7,480	7,700	7,500	5,600	6,200	10,000	15,200	22,800	31,000	25,300	10,400	9,600
7	7,330	6,900	7,600	5,500	6,200	13,000	14,600	23,200	36,400	24,200	10,100	9,420
8	7,350	5,900	7,700	5,300	6,000	18,000	13,800	22,500	45,600	23,200	9,780	9,080
9	7,350	5,200	7,800	5,200	5,900	22,200	13,400	21,800	67,700	23,200	9,600	8,720
10	7,400	4,800	7,900	5,200	5,900	23,000	13,400	21,200	63,800	22,500	9,600	8,250
11	7,200	4,400	8,000	5,200	5,900	24,000	14,400	20,300	48,700	20,900	9,250	8,100
12	7,400	4,200	8,200	5,200	5,900	23,000	16,200	19,400	42,100	20,600	9,080	7,950
13	7,550	3,800	8,400	5,200	5,900	23,600	16,200	18,800	37,300	18,800	8,900	7,800
14	7,710	3,700	8,500	5,200	5,900	23,600	18,800	18,800	38,200	18,300	8,900	7,500
15	7,870	3,700	8,600	5,300	5,900	23,500	37,600	18,800	47,200	17,600	8,720	7,200
16	7,870	3,700	8,700	5,400	6,000	22,700	75,000	21,800	47,200	16,600	8,550	7,200
17	8,030	3,700	8,700	5,500	6,100	22,600	82,400	28,000	44,100	16,200	8,900	7,250
18	8,190	3,800	8,600	5,600	6,200	24,600	51,400	29,600	40,600	15,400	9,950	7,240
19	7,830	4,000	8,400	5,700	6,300	86,300	41,300	29,200	37,100	15,000	11,400	7,560
20	8,030	4,300	8,200	6,000	6,300	54,200	35,800	28,400	35,100	14,800	12,400	7,650
21	7,870	4,500	8,000	6,100	6,200	43,400	32,800	27,600	34,800	15,000	12,400	7,750
22	8,190	4,800	7,800	6,200	6,000	37,600	27,200	35,800	34,800	15,600	12,000	7,750
23	8,350	5,100	7,600	6,200	5,800	54,200	23,600	59,200	38,200	16,400	11,600	7,600
24	8,350	5,300	7,400	6,100	5,700	49,600	21,500	52,300	40,600	15,900	11,000	7,650
25	8,350	5,500	7,200	5,900	5,400	44,100	21,400	45,000	40,600	15,200	10,600	7,500
26	8,350	5,700	7,000	5,700	5,200	31,900	21,900	38,600	40,000	15,200	10,400	7,350
27	8,350	5,900	6,800	5,500	4,900	27,600	21,300	35,200	38,200	15,900	10,600	7,350
28	8,110	6,200	6,700	5,400	4,600	27,200	21,800	33,600	35,800	16,400	11,600	7,200
29	8,500	6,400	6,700	5,500	4,500	26,800	22,800	34,800	32,800	16,600	11,600	7,200
30	8,660	6,700	6,900	5,700	---	22,200	23,800	35,300	31,000	15,900	10,800	7,350
31	8,760	---	6,900	5,900	---	19,700	---	35,300	---	14,400	10,400	---
TOTAL	243,630	168,960	237,700	176,700	170,600	831,600	787,100	888,700	1,188,700	605,100	330,330	244,950
MEAN	7,859	5,632	7,668	5,700	5,883	26,830	26,240	28,670	39,620	19,520	10,660	8,165
MAX	8,760	8,840	8,700	6,800	6,500	86,300	82,400	59,200	67,700	29,600	13,600	10,200
MIN	7,200	3,700	6,700	5,200	4,500	5,000	13,400	18,800	30,200	14,400	8,550	7,200
AC-FT	483,200	335,100	471,500	350,500	338,400	1,649,000	1,561,000	1,763,000	2,358,000	1,200,000	655,200	485,900

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1936 TO SEPTEMBER 1937 DAILY MEAN VALUES												
1	7,350	8,900	12,000	4,800	4,800	5,300	16,600	17,000	26,200	64,200	21,500	6,500
2	7,500	9,080	11,200	4,800	5,050	5,400	17,200	17,000	24,000	52,200	20,000	6,250
3	7,350	10,200	10,200	4,800	5,150	5,700	17,600	16,600	22,900	44,000	19,100	6,120
4	7,350	10,500	9,200	4,900	5,200	11,400	18,600	15,600	23,900	39,400	18,300	6,000
5	7,200	9,000	8,100	5,200	5,200	15,000	20,000	15,200	27,600	35,300	16,800	6,000
6	7,050	7,250	6,900	5,900	5,200	17,500	19,600	14,400	40,500	32,400	15,900	5,850
7	7,200	5,750	5,800	6,750	5,200	18,700	19,600	14,000	42,100	30,600	15,200	5,820
8	7,200	4,900	5,000	7,600	5,200	17,500	20,000	13,800	47,800	29,600	14,600	5,820
9	7,200	5,100	4,200	8,300	5,200	16,800	19,000	13,600	44,600	28,800	14,200	6,080
10	7,350	5,500	3,700	9,000	5,200	16,100	19,000	13,200	33,800	28,000	14,200	6,200
11	7,500	5,900	3,600	9,600	5,200	15,400	20,300	12,600	28,000	28,800	14,000	6,080
12	7,800	6,620	3,500	9,800	5,200	15,200	38,400	12,900	29,400	28,200	14,800	5,950
13	7,950	7,650	3,700	9,250	5,200	14,900	57,600	12,700	42,600	36,300	14,800	5,820
14	8,250	9,780	4,200	8,600	5,200	14,700	61,200	12,900	52,500	91,200	14,200	5,820
15	8,400	9,950	4,300	7,750	5,300	14,300	45,900	12,000	57,200	56,200	13,000	5,720
16	8,400	8,400	4,300	7,200	5,300	14,200	32,800	12,300	70,200	53,200	12,000	6,080
17	8,400	7,800	4,400	6,500	5,300	13,900	28,600	12,100	77,900	46,400	11,600	6,450
18	8,400	7,650	4,600	5,800	5,300	13,700	24,300	11,700	101,000	48,800	10,800	7,000
19	8,550	8,250	4,700	5,250	5,200	13,500	22,000	11,600	109,000	83,400	10,300	7,650
20	8,550	14,000	4,750	4,700	5,200	13,300	20,600	11,600	110,000	87,600	9,600	7,650
21	8,720	14,600	4,800	4,200	5,200	13,100	19,500	13,000	74,200	79,200	8,900	7,500
22	8,720	13,600	4,800	3,750	5,200	12,800	19,500	14,800	59,200	62,000	8,400	7,300
23	8,550	14,000	4,800	3,750	5,200	12,600	19,000	16,100	56,200	48,100	7,800	7,250
24	8,550	19,100	4,900	3,800	5,200	12,400	18,800	18,000	63,200	43,300	7,500	6,720
25	8,720	17,600	4,900	3,950	5,200	12,300	18,800	18,800	67,200	39,400	7,200	6,820
26	8,720	14,800	4,900	4,100	5,250	12,200	18,300	19,100	64,200	33,800	7,200	7,100
27	8,720	13,000	4,800	4,200	5,250	12,400	17,000	19,100	59,200	30,100	7,200	7,250
28	8,720	12,000	4,800	4,300	5,300	13,600	16,100	18,600	59,200	28,000	7,650	7,400
29	8,550	12,200	4,800	4,350	---	14,800	16,100	19,100	63,200	26,400	7,800	7,450
30	8,720	12,400	4,800	4,550	---	14,900	16,400	25,300	66,200	24,600	6,750	7,050
31	8,720	---	4,800	4,750	---	15,600	---	29,100	---	22,800	6,500	---
TOTAL	250,360	305,480	171,450	182,200	145,600	419,200	718,400	483,800	1,643,200	1,382,300	377,800	196,700
MEAN	8,076	10,180	5,531	5,877	5,200	13,520	23,950	15,610	54,770	44,590	12,190	6,557
MAX	8,720	19,100	12,000	9,800	5,300	18,700	61,200	29,100	110,000	91,200	21,500	7,650
MIN	7,050	4,900	3,500	3,750	4,800	5,300	16,100	11,600	22,900	22,800	6,500	5,720
AC-FT	496,600	605,900	340,100	361,400	288,800	831,500	1,425,000	959,600	3,259,000	2,742,000	749,400	390,200

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1937 TO SEPTEMBER 1938 DAILY MEAN VALUES												
1	6,750	10,200	5,380	5,200	6,700	7,600	25,300	11,900	23,200	96,100	36,400	19,700
2	6,620	10,000	4,600	5,300	6,700	7,700	23,200	12,400	22,800	96,100	39,400	19,400
3	6,380	9,980	3,600	5,300	6,700	7,700	22,200	11,600	22,200	101,000	38,300	18,800
4	6,120	9,800	3,600	5,400	6,700	7,600	20,600	11,800	22,500	112,000	32,800	18,300
5	5,880	9,620	3,600	5,500	6,700	7,400	19,100	12,600	38,200	122,000	30,100	18,000
6	6,000	9,800	3,600	5,600	6,700	6,800	17,300	13,600	52,300	113,000	28,400	18,600
7	6,500	9,620	3,650	5,700	6,700	5,700	15,200	13,500	48,800	105,000	27,700	23,700
8	6,750	9,620	3,700	5,800	6,600	5,600	13,600	13,300	44,800	108,000	27,800	32,800
9	7,050	9,670	3,800	5,850	6,100	6,000	12,200	13,000	41,300	114,000	28,100	22,800
10	7,350	9,620	3,850	5,950	5,600	9,000	11,400	12,800	37,000	123,000	28,000	22,800
11	7,950	9,620	3,900	6,000	5,400	11,000	10,800	12,600	34,300	102,000	27,100	23,200
12	8,400	9,450	3,950	6,100	5,100	12,600	11,900	12,600	34,800	78,900	24,800	21,300
13	8,900	9,280	3,950	6,200	4,750	13,600	13,000	12,600	48,800	65,300	25,100	21,900
14	9,600	9,200	4,000	6,250	4,600	13,900	14,000	12,600	53,200	56,900	24,600	22,800
15	9,950	9,280	4,100	6,300	4,500	14,200	13,700	14,500	52,300	52,100	25,000	27,900
16	10,800	9,100	4,150	6,350	4,400	14,700	13,400	16,000	51,400	50,300	24,600	29,700
17	14,000	9,420	4,200	6,400	4,400	17,000	13,400	16,500	48,600	52,400	25,000	26,400
18	15,600	9,080	4,250	6,450	4,350	34,000	13,000	16,400	46,000	54,200	24,600	24,600
19	15,400	6,120	4,350	6,500	4,250	52,300	13,000	15,800	44,600	51,400	22,800	22,500
20	14,800	4,600	4,400	6,600	4,200	83,400	12,400	15,800	40,000	47,200	22,500	21,500
21	14,100	3,720	4,500	6,600	4,200	130,000	12,000	15,900	43,800	44,100	22,200	20,900
22	13,200	4,250	4,600	6,650	4,250	162,000	11,800	15,400	53,400	42,100	22,200	20,600
23	12,600	3,150	4,650	6,700	4,300	85,000	11,800	15,100	52,500	40,400	22,800	20,900
24	12,200	3,730	4,700	6,700	4,300	54,200	11,600	15,200	62,900	39,200	22,800	20,600
25	11,600	4,200	4,750	6,700	4,400	48,000	11,800	15,000	77,700	38,100	22,800	20,100
26	11,200	4,200	4,800	6,700	4,700	46,400	12,000	14,900	70,200	35,800	22,200	19,000
27	10,800	4,300	4,900	6,700	5,400	43,400	11,800	14,600	67,000	32,400	21,200	19,000
28	10,500	4,000	4,900	6,700	6,200	40,000	11,800	21,800	81,300	30,600	21,000	18,600
29	10,200	4,000	5,000	6,700	---	35,300	11,400	29,100	95,900	31,600	20,200	18,800
30	10,000	4,300	5,100	6,700	---	31,900	11,600	27,000	115,000	33,000	21,000	18,600
31	10,200	---	5,100	6,700	---	26,800	---	24,800	---	34,400	20,600	---
TOTAL	307,400	222,930	133,630	192,300	148,900	1,040,800	426,300	480,700	1,526,800	2,102,600	802,100	653,800
MEAN	9,916	7,431	4,311	6,203	5,318	33,570	14,210	15,510	50,890	67,830	25,870	21,790
MAX	15,600	10,200	5,380	6,700	6,700	162,000	25,300	29,100	115,000	123,000	39,400	32,800
MIN	5,880	3,150	3,600	5,200	4,200	5,600	10,800	11,600	22,200	30,600	20,200	18,000
AC-FT	609,700	442,200	265,100	381,400	295,300	2,064,000	845,600	953,500	3,028,000	4,171,000	1,591,000	1,297,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1938 TO SEPTEMBER 1939 DAILY MEAN VALUES												
1	18,400	14,600	8,700	8,200	10,600	6,400	167,000	20,300	42,500	46,500	16,400	12,200
2	18,200	15,400	9,200	8,400	10,000	6,600	146,000	20,300	48,200	45,600	15,900	12,200
3	18,400	14,900	9,500	8,900	9,400	6,800	92,800	20,300	49,300	51,500	15,500	12,200
4	18,800	14,400	11,000	9,200	9,200	6,800	68,200	19,500	44,900	50,500	15,600	11,600
5	19,200	14,400	11,700	9,900	9,000	6,800	58,800	19,300	41,700	47,200	15,100	10,900
6	19,800	14,200	11,400	10,500	8,800	7,000	53,000	19,300	40,400	43,700	15,400	10,500
7	20,200	14,000	11,800	10,700	8,600	7,200	49,800	19,800	50,000	42,500	15,400	10,100
8	20,200	13,300	10,700	10,900	8,400	7,700	47,500	20,000	71,400	42,000	14,000	9,760
9	20,800	12,900	9,580	10,800	8,200	8,200	43,800	20,300	72,300	41,400	13,300	9,580
10	22,000	13,300	9,930	10,700	7,800	8,400	40,700	20,000	62,500	43,300	12,600	9,080
11	23,100	14,900	10,300	11,200	7,500	7,700	37,400	24,300	46,900	42,300	12,200	8,910
12	22,200	20,300	10,500	11,800	7,200	7,800	33,900	30,700	39,700	41,000	12,400	8,750
13	20,900	20,300	10,000	11,900	6,900	8,000	31,200	31,500	42,000	38,500	12,400	8,590
14	18,200	19,500	10,000	12,100	6,900	8,100	29,900	32,900	46,500	38,200	12,400	8,590
15	16,400	18,700	10,000	12,200	7,000	8,200	29,900	34,700	46,500	36,200	12,600	8,440
16	14,700	18,400	9,900	12,300	7,200	8,300	29,300	33,300	45,800	33,000	13,300	8,280
17	13,300	17,900	9,800	12,400	7,500	9,600	29,800	32,000	44,000	29,400	13,900	8,130
18	12,200	20,000	10,100	12,200	7,800	11,600	30,400	30,200	42,700	27,000	14,200	7,980
19	11,600	19,800	9,800	12,100	7,600	13,400	29,200	29,400	40,600	26,200	14,000	7,980
20	11,200	18,400	9,600	12,300	7,400	17,200	28,500	30,200	43,600	22,900	13,600	7,840
21	11,000	17,400	9,600	12,200	7,100	17,700	28,700	33,800	46,500	21,700	12,500	7,840
22	10,900	16,100	9,700	12,000	6,600	20,000	28,400	36,100	46,500	21,400	13,000	7,840
23	11,300	14,900	8,900	11,800	6,300	25,000	27,600	37,100	48,600	20,800	13,700	7,840
24	11,400	10,200	8,800	11,500	5,900	31,000	26,600	35,600	60,800	19,800	14,000	7,740
25	11,600	9,410	9,100	11,100	5,900	36,000	25,600	35,200	59,900	19,000	14,400	7,980
26	11,600	8,750	8,700	11,700	6,000	39,700	23,800	35,200	53,000	18,400	14,400	7,880
27	11,700	8,280	8,100	12,300	6,100	43,500	22,700	46,900	47,900	18,400	13,800	8,080
28	11,800	8,500	7,700	12,400	6,200	84,400	21,300	48,900	49,200	19,500	15,100	8,040
29	12,000	8,500	7,900	12,000	---	146,000	20,400	45,000	53,000	19,800	13,800	8,140
30	13,000	8,500	7,800	12,000	---	167,000	20,500	42,000	52,200	19,000	13,000	8,040
31	13,900	---	8,000	11,400	---	193,000	---	40,300	---	17,700	12,700	---
TOTAL	490,000	440,140	297,810	349,100	213,100	975,100	1,322,700	944,400	1,479,100	1,004,400	430,600	271,030
MEAN	15,810	14,670	9,607	11,260	7,611	31,450	44,090	30,460	49,300	32,400	13,890	9,034
MAX	23,100	20,300	11,800	12,400	10,600	193,000	167,000	48,900	72,300	51,500	16,400	12,200
MIN	10,900	8,280	7,700	8,200	5,900	6,400	20,400	19,300	39,700	17,700	12,200	7,740
AC-FT	971,900	873,000	590,700	692,400	422,700	1,934,000	2,624,000	1,873,000	2,934,000	1,992,000	854,100	537,600

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1939 TO SEPTEMBER 1940 DAILY MEAN VALUES												
1	7,980	8,790	10,500	3,200	4,400	5,300	11,700	37,800	19,300	30,700	19,800	18,300
2	8,180	8,710	10,100	3,200	4,500	5,200	13,400	31,900	18,600	29,600	22,400	17,800
3	8,180	8,750	10,300	3,000	4,400	5,200	15,500	26,000	18,000	27,400	21,400	17,800
4	8,180	8,950	10,000	2,800	4,100	5,200	17,000	25,200	18,000	25,200	20,600	17,600
5	8,340	9,210	9,880	2,800	3,800	5,200	15,500	26,000	17,600	23,700	20,600	16,800
6	8,490	9,440	9,810	2,900	3,700	5,400	13,300	24,800	17,800	22,000	22,400	18,800
7	8,490	9,510	9,640	3,000	3,600	5,600	14,600	22,700	20,900	20,300	26,500	18,000
8	8,590	9,760	9,590	3,000	3,500	5,800	15,200	21,200	23,700	19,300	27,000	18,000
9	8,750	9,760	9,780	2,800	3,400	6,100	15,000	20,100	25,600	18,800	26,500	18,000
10	8,750	9,680	9,650	2,500	3,400	6,200	13,300	19,600	26,000	17,800	24,800	17,800
11	8,750	9,880	9,880	2,600	3,400	6,200	12,700	19,100	29,600	16,800	22,700	17,300
12	8,710	9,980	9,880	2,600	3,400	6,100	12,700	18,600	39,000	16,100	21,200	17,300
13	8,840	10,200	9,700	2,600	3,400	5,900	12,700	18,300	55,700	15,700	20,100	15,700
14	8,980	10,500	9,700	2,600	3,500	5,800	12,700	17,300	42,600	16,400	19,800	14,600
15	8,980	10,500	9,350	2,700	3,700	5,600	15,400	16,800	37,200	19,600	19,300	13,100
16	9,010	10,700	9,530	2,800	4,000	5,600	34,200	16,600	38,400	21,800	19,100	11,700
17	8,940	10,800	9,700	2,900	4,300	5,800	34,800	16,600	40,800	21,200	19,100	10,400
18	8,940	11,200	9,700	3,100	4,700	7,200	28,500	17,100	36,000	19,100	19,100	9,400
19	8,960	11,200	9,500	3,100	5,000	7,800	25,200	17,300	29,600	17,300	18,800	8,910
20	9,120	11,000	9,080	3,100	5,300	8,400	20,300	16,600	27,000	16,600	18,600	8,280
21	9,570	11,000	8,910	3,300	5,500	8,200	16,600	15,700	24,800	16,600	18,300	7,840
22	9,120	11,000	9,080	3,500	5,600	7,300	14,800	15,000	23,700	17,300	18,300	7,550
23	9,210	11,000	8,440	3,600	5,700	6,900	16,600	16,400	25,600	17,800	18,300	7,280
24	9,310	11,000	7,600	3,800	5,600	6,800	19,600	21,400	33,600	17,300	18,000	7,140
25	9,240	11,000	5,700	4,000	5,600	6,800	20,300	24,000	34,800	17,100	18,300	7,140
26	9,380	11,000	5,000	4,100	5,500	6,700	19,600	23,300	36,000	17,300	18,300	7,140
27	9,300	11,000	4,700	4,200	5,400	6,600	18,800	22,000	33,600	17,600	18,000	7,410
28	9,450	10,800	4,000	4,300	5,400	6,800	18,600	21,400	30,700	18,000	17,800	7,690
29	9,450	10,700	3,800	4,300	5,300	7,000	23,300	21,200	29,600	18,000	17,800	7,840
30	9,290	10,700	3,600	4,300	---	7,300	40,800	20,600	29,600	18,300	17,800	7,980
31	9,390	---	3,400	4,400	---	8,400	---	20,100	---	18,300	18,000	---
TOTAL	275,870	307,720	259,500	101,100	129,100	198,400	562,700	650,700	883,400	609,000	628,700	380,600
MEAN	8,899	10,260	8,371	3,261	4,452	6,400	18,760	20,990	29,450	19,650	20,280	12,690
MAX	9,570	11,200	10,500	4,400	5,700	8,400	40,800	37,800	55,700	30,700	27,000	18,800
MIN	7,980	8,710	3,400	2,500	3,400	5,200	11,700	15,000	17,600	15,700	17,800	7,140
AC-FT	547,200	610,400	514,700	200,500	256,100	393,500	1,116,000	1,291,000	1,752,000	1,208,000	1,247,000	754,900

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1940 TO SEPTEMBER 1941 DAILY MEAN VALUES												
1	8,900	10,700	4,600	5,300	5,800	6,300	27,600	18,600	23,600	32,300	19,500	19,200
2	9,540	10,700	4,300	5,200	5,900	6,300	22,500	18,600	23,200	30,400	19,200	19,500
3	9,700	10,900	4,200	5,000	6,000	6,300	20,800	18,600	30,400	28,600	19,500	20,100
4	9,540	11,000	4,600	5,000	6,200	6,300	20,800	19,200	39,100	27,600	19,500	19,800
5	9,380	11,200	5,300	5,200	6,100	6,300	19,200	19,200	40,800	29,000	20,100	19,200
6	10,000	11,200	6,300	5,400	5,900	6,200	21,100	18,900	50,900	29,400	20,800	19,500
7	10,400	11,000	7,200	5,700	5,800	6,200	23,200	18,900	46,300	27,200	23,600	20,100
8	10,500	11,000	7,800	5,900	5,600	6,200	38,000	18,600	46,300	25,100	27,600	20,400
9	10,900	10,900	8,100	6,200	5,400	6,200	36,900	19,500	60,400	23,600	26,800	22,500
10	10,900	10,000	8,300	6,500	5,400	6,200	30,800	20,100	74,500	22,800	23,600	24,000
11	17,000	9,700	8,300	6,800	5,300	6,300	29,900	20,100	101,000	22,200	21,800	25,500
12	26,400	8,150	8,200	6,900	5,300	6,500	32,300	20,100	125,000	21,800	21,100	31,300
13	25,100	3,520	8,000	6,900	5,400	7,000	33,300	20,100	127,000	21,400	21,100	45,000
14	21,400	2,300	7,800	6,800	5,600	7,500	47,000	19,800	106,000	21,100	21,400	45,700
15	19,500	2,300	7,800	6,700	5,700	8,000	39,100	19,800	82,800	21,100	21,400	46,300
16	17,500	2,300	7,700	6,300	5,900	8,700	29,900	19,800	65,900	22,500	21,400	34,800
17	15,500	2,400	7,700	6,000	6,100	9,300	28,100	20,400	58,000	25,100	24,000	26,800
18	14,200	2,500	7,800	5,700	6,200	9,700	24,000	21,100	55,800	23,200	26,800	21,100
19	13,200	2,600	7,900	5,300	6,300	9,900	22,500	21,100	48,900	21,100	26,400	18,900
20	12,600	2,800	8,200	5,000	6,300	10,100	21,400	20,100	40,200	19,800	24,000	18,100
21	12,300	3,100	8,600	4,800	6,400	10,200	20,100	18,900	36,400	18,600	22,200	17,800
22	11,900	3,400	9,100	4,700	6,400	10,200	19,500	18,300	34,800	18,300	21,100	17,500
23	11,700	3,800	9,600	4,400	6,400	10,300	19,500	18,100	35,300	18,300	20,800	17,500
24	11,700	4,200	9,700	4,300	6,400	10,500	18,900	24,700	39,100	18,600	20,400	18,300
25	11,500	4,400	9,700	4,400	6,400	10,700	18,600	29,400	43,200	20,100	21,400	17,800
26	11,700	4,700	9,200	4,500	6,400	11,100	19,500	28,100	39,700	20,400	21,400	16,800
27	11,700	4,800	8,000	4,700	6,300	12,300	20,100	26,400	36,400	20,400	19,500	16,000
28	11,500	4,800	7,200	5,000	6,300	12,400	20,400	24,700	35,300	20,400	18,100	15,800
29	11,200	4,900	6,600	5,200	---	12,300	19,800	24,000	34,300	19,800	17,500	15,100
30	10,900	4,800	6,200	5,400	---	12,600	18,900	23,600	33,300	19,500	17,800	14,900
31	10,700	---	5,700	5,700	---	17,300	---	23,200	---	19,800	18,900	---
TOTAL	408,960	190,070	229,700	170,900	167,200	275,400	763,700	652,000	1,613,900	709,500	668,700	685,300
MEAN	13,190	6,336	7,410	5,513	5,971	8,884	25,460	21,030	53,800	22,890	21,570	22,840
MAX	26,400	11,200	9,700	6,900	6,400	17,300	47,000	29,400	127,000	32,300	27,600	46,300
MIN	8,900	2,300	4,200	4,300	5,300	6,200	18,600	18,100	23,200	18,300	17,500	14,900
AC-FT	811,200	377,000	455,600	339,000	331,600	546,300	1,515,000	1,293,000	3,201,000	1,407,000	1,326,000	1,359,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1941 TO SEPTEMBER 1942 DAILY MEAN VALUES												
1	14,900	15,100	7,120	7,800	5,900	7,000	8,300	50,200	47,600	38,600	25,100	18,300
2	15,100	14,600	6,840	7,600	6,300	7,100	13,800	57,300	48,900	38,600	22,200	18,900
3	15,100	14,400	6,980	7,800	6,700	7,200	33,800	48,200	55,100	39,100	21,100	19,200
4	15,500	14,200	7,700	7,900	7,100	7,300	25,500	40,800	71,800	40,800	20,800	18,900
5	15,800	14,200	8,450	8,000	7,500	7,400	32,800	36,900	75,400	42,600	20,100	18,600
6	16,500	14,400	8,300	8,000	8,000	7,500	46,300	33,800	82,800	42,600	19,800	18,900
7	18,100	14,200	8,150	7,500	8,600	7,600	62,700	30,800	83,800	39,100	20,800	18,900
8	20,800	14,200	8,200	7,000	9,200	7,700	47,600	30,800	71,000	35,800	21,800	19,200
9	21,400	13,600	8,500	6,700	9,300	7,800	31,800	30,400	63,500	33,800	23,200	19,500
10	20,800	13,400	7,000	6,300	9,200	7,900	25,100	27,200	71,800	32,800	24,000	19,500
11	20,100	13,200	6,500	6,000	8,900	8,000	21,800	26,800	90,800	33,300	23,200	19,500
12	19,500	13,000	4,300	5,800	8,600	8,100	19,500	28,600	86,800	34,300	22,800	19,500
13	22,800	12,800	4,200	5,400	8,500	8,200	17,800	39,100	77,200	35,800	22,200	19,200
14	27,200	13,000	4,000	5,000	8,600	8,300	17,300	40,200	68,400	36,900	21,100	18,900
15	26,800	13,000	4,000	4,800	8,700	8,400	16,800	42,600	68,400	37,400	20,400	18,600
16	24,300	13,000	4,200	4,600	8,800	8,500	17,000	38,000	71,000	38,000	20,100	18,300
17	21,400	13,000	4,500	4,500	8,800	8,000	17,500	59,600	76,300	38,000	19,800	18,300
18	19,800	13,000	5,000	4,400	8,800	8,150	17,800	64,300	75,400	38,600	19,500	18,300
19	18,900	12,800	5,500	4,400	8,900	8,600	17,500	81,900	68,400	37,400	19,200	18,100
20	17,800	12,400	6,000	4,400	9,000	10,200	17,800	68,400	60,400	34,800	18,900	18,100
21	16,800	12,300	6,700	4,400	8,500	18,600	18,100	55,800	52,300	31,800	18,900	18,300
22	16,300	11,900	7,500	4,400	8,100	55,800	17,800	45,000	45,700	28,600	18,900	18,600
23	15,800	11,700	8,100	4,400	7,800	48,900	17,800	36,900	44,400	27,600	18,600	19,200
24	15,300	11,200	8,200	4,400	7,500	58,000	18,300	33,800	45,000	25,900	18,300	19,800
25	15,300	10,500	8,200	4,400	7,300	53,000	18,900	31,800	46,300	24,300	17,800	20,100
26	16,000	9,860	8,300	4,500	7,300	48,900	19,500	30,400	38,600	22,800	17,500	19,800
27	16,000	8,300	8,300	4,600	7,300	37,400	21,100	29,000	39,100	22,800	17,500	20,400
28	15,500	7,550	8,400	4,800	7,200	25,500	25,100	26,800	41,400	25,900	17,500	20,800
29	16,000	7,400	8,300	5,000	---	15,800	22,800	27,600	39,100	25,500	17,500	21,100
30	16,000	7,550	8,200	5,200	---	10,900	25,900	27,200	38,000	25,100	18,100	21,800
31	15,500	---	8,000	5,500	---	8,000	---	28,600	---	26,800	18,300	---
TOTAL	567,100	369,760	213,640	175,500	226,400	539,750	713,800	1,248,800	1,844,700	1,035,400	625,000	576,600
MEAN	18,290	12,330	6,892	5,661	8,086	17,410	23,790	40,280	61,490	33,400	20,160	19,220
MAX	27,200	15,100	8,500	8,000	9,300	58,000	62,700	81,900	90,800	42,600	25,100	21,800
MIN	14,900	7,400	4,000	4,400	5,900	7,000	8,300	26,800	38,000	22,800	17,500	18,100
AC-FT	1,125,000	733,400	423,800	348,100	449,100	1,071,000	1,416,000	2,477,000	3,659,000	2,054,000	1,240,000	1,144,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1942 TO SEPTEMBER 1943 DAILY MEAN VALUES												
1	22,200	19,800	7,400	7,600	6,400	30,000	197,000	25,600	22,100	87,200	30,000	32,200
2	22,200	19,500	7,260	8,400	6,400	25,000	202,000	25,900	24,400	85,600	28,900	34,200
3	22,200	19,500	6,400	9,000	6,200	24,000	211,000	26,900	24,400	84,000	28,600	35,000
4	21,800	19,800	6,000	9,400	6,000	23,000	245,000	26,900	24,400	84,000	28,600	35,000
5	21,100	20,100	5,600	9,600	5,800	25,000	263,000	26,600	45,600	89,600	28,200	33,000
6	21,400	20,800	5,300	9,600	5,600	26,000	278,000	26,900	71,000	80,900	27,500	30,700
7	21,100	21,100	5,100	9,400	5,400	25,000	239,000	26,900	80,900	78,600	26,800	29,300
8	21,100	21,800	5,000	9,200	5,300	25,000	122,000	25,800	85,600	81,700	27,200	27,800
9	20,400	22,200	4,900	8,800	5,200	25,000	63,400	24,100	81,700	83,200	25,400	27,200
10	20,100	22,500	4,800	8,400	5,200	25,000	52,800	23,100	74,700	78,600	25,100	27,500
11	19,800	22,200	4,700	8,000	5,100	30,000	44,700	22,800	66,000	71,700	24,400	28,600
12	19,500	21,800	4,600	7,500	5,200	36,000	40,000	22,500	63,300	67,400	24,800	28,900
13	18,900	21,400	4,700	7,200	5,300	32,000	37,900	22,800	51,800	66,700	25,100	28,900
14	18,900	21,800	4,800	7,000	5,600	29,000	37,200	23,400	80,100	68,100	24,800	28,600
15	18,900	21,800	4,800	6,800	6,200	27,000	35,800	24,400	77,800	64,600	24,400	28,200
16	18,600	22,200	4,800	6,600	7,000	25,000	34,500	25,400	80,100	63,300	23,400	28,200
17	18,300	21,800	4,800	6,400	7,300	20,000	34,100	25,800	68,100	62,000	22,100	27,500
18	18,600	20,400	4,800	6,200	7,600	21,000	33,100	25,400	61,300	59,400	21,500	27,500
19	18,300	18,600	4,900	6,100	7,800	20,500	31,500	24,400	71,700	56,100	21,500	27,500
20	18,600	17,300	5,000	6,000	8,500	19,500	31,100	23,800	74,700	52,400	21,800	27,200
21	18,600	16,000	5,000	5,900	9,500	19,000	31,100	23,400	74,000	47,800	22,100	27,200
22	18,900	15,100	5,000	5,800	10,500	18,500	32,100	23,400	68,100	44,000	22,500	27,200
23	18,900	14,400	4,900	5,800	11,500	18,500	33,100	23,100	58,000	41,000	24,100	26,800
24	19,200	13,800	4,900	5,800	13,000	19,000	29,800	23,400	57,400	39,200	28,200	26,800
25	19,200	13,600	4,800	5,900	17,000	19,500	27,500	22,100	60,000	37,900	30,400	26,800
26	19,500	13,000	4,700	6,100	25,000	30,000	26,200	21,200	66,700	37,100	30,400	27,200
27	19,800	12,300	4,700	6,300	30,000	35,000	24,000	20,800	77,800	35,000	30,400	27,200
28	20,400	11,700	4,700	6,400	35,000	50,000	24,600	19,900	84,000	33,400	31,100	27,500
29	20,400	10,900	5,000	6,400	---	100,000	24,000	20,500	91,200	31,900	31,100	27,800
30	20,400	8,600	5,800	6,400	---	150,000	24,000	22,100	90,400	31,100	31,100	27,500
31	20,100	---	6,800	6,400	---	179,000	---	21,800	---	30,700	31,100	---
TOTAL	617,400	545,800	161,960	224,400	274,600	1,151,500	2,509,500	741,100	1,957,300	1,874,200	822,600	865,000
MEAN	19,920	18,190	5,225	7,239	9,807	37,150	83,650	23,910	65,240	60,460	26,540	28,830
MAX	22,200	22,500	7,400	9,600	35,000	179,000	278,000	26,900	91,200	89,600	31,100	35,000
MIN	18,300	8,600	4,600	5,800	5,100	18,500	24,000	19,900	22,100	30,700	21,500	26,800
AC-FT	1,225,000	1,083,000	321,200	445,100	544,700	2,284,000	4,978,000	1,470,000	3,882,000	3,717,000	1,632,000	1,716,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1943 TO SEPTEMBER 1944 DAILY MEAN VALUES												
1	27,200	26,800	23,800	11,000	15,400	9,200	22,700	16,800	33,800	104,000	22,800	26,100
2	26,500	26,800	23,400	11,700	16,300	9,100	26,000	16,200	33,100	92,000	22,800	26,100
3	26,100	26,800	24,100	12,800	16,800	9,100	40,000	16,000	32,100	90,100	23,100	25,800
4	26,100	27,200	23,400	13,800	16,500	9,000	102,000	15,200	33,100	92,000	23,800	25,400
5	26,500	27,500	24,100	14,800	16,200	8,900	102,000	14,400	32,800	93,000	25,400	25,100
6	26,800	28,200	24,100	15,600	16,000	8,800	121,000	14,400	42,400	82,700	25,400	24,400
7	27,500	28,900	23,400	16,300	15,900	8,800	175,000	13,200	62,000	69,200	25,100	24,100
8	28,200	28,900	22,800	16,700	15,700	8,800	179,000	12,700	67,000	62,000	24,400	24,100
9	28,200	28,900	22,100	17,200	15,800	8,800	186,000	13,200	67,700	60,600	25,400	23,400
10	28,600	28,600	21,800	17,700	16,000	8,700	166,000	13,400	71,600	62,000	27,200	22,500
11	28,200	28,200	21,500	17,900	16,400	8,700	149,000	13,700	74,800	59,900	28,600	21,800
12	27,800	27,500	20,800	17,900	16,500	8,700	149,000	14,700	78,200	59,900	30,000	21,200
13	28,200	26,800	19,000	17,800	16,300	8,700	113,000	14,700	74,000	56,000	30,700	20,800
14	27,800	26,100	17,000	17,400	15,800	8,800	73,200	16,200	71,600	56,600	30,400	20,800
15	27,800	26,100	15,000	16,900	15,000	8,800	60,600	17,000	67,700	52,800	29,300	21,500
16	28,200	26,100	14,000	16,000	14,300	8,900	53,400	16,000	68,400	50,400	28,200	21,500
17	27,800	25,800	13,000	15,000	13,500	9,000	46,600	15,200	80,000	48,800	27,200	20,500
18	27,800	25,400	13,000	14,000	12,800	9,200	40,400	14,400	84,500	47,100	25,800	19,000
19	27,200	24,800	12,500	12,700	12,000	9,300	33,800	13,400	101,000	45,600	26,100	18,600
20	25,800	23,800	12,500	11,300	11,400	9,400	29,500	12,700	114,000	42,800	26,100	18,600
21	25,100	23,100	12,000	10,500	11,000	9,600	26,900	13,000	127,000	39,600	26,500	18,600
22	25,100	22,800	12,000	9,600	10,400	9,800	25,200	13,400	125,000	37,200	26,500	19,000
23	25,100	22,800	11,700	9,000	10,100	10,000	23,300	15,500	124,000	34,800	25,800	19,000
24	25,800	23,100	11,400	8,900	9,900	11,000	22,700	17,600	131,000	33,100	25,800	19,000
25	26,100	23,100	10,800	9,000	9,700	13,500	21,400	36,800	136,000	31,500	26,500	19,300
26	26,800	23,400	10,500	9,200	9,500	14,000	20,800	53,400	127,000	29,500	25,800	19,300
27	27,500	23,400	10,300	9,800	9,400	15,500	20,000	55,300	115,000	28,200	26,100	19,300
28	27,500	23,400	10,000	10,700	9,300	17,000	18,900	50,400	127,000	26,200	26,100	19,000
29	27,500	23,100	10,100	12,000	9,200	18,100	17,800	41,600	134,000	25,200	26,500	18,600
30	27,200	23,800	10,200	13,000	---	19,200	17,300	37,200	122,000	24,600	26,500	18,600
31	27,200	---	10,400	14,300	---	21,000	---	35,200	---	24,000	26,500	---
TOTAL	839,200	771,200	510,700	420,500	393,100	337,400	2,082,500	662,900	2,557,800	1,661,400	816,400	641,000
MEAN	27,070	25,710	16,470	13,560	13,560	10,880	69,420	21,380	85,260	53,590	26,340	21,370
MAX	28,600	28,900	24,100	17,900	16,800	21,000	186,000	55,300	136,000	104,000	30,700	26,100
MIN	25,100	22,800	10,000	8,900	9,200	8,700	17,300	12,700	32,100	24,000	22,800	18,600
AC-FT	1,665,000	1,530,000	1,013,000	834,100	779,700	669,200	4,131,000	1,315,000	5,073,000	3,295,000	1,619,000	1,271,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1944 TO SEPTEMBER 1945 DAILY MEAN VALUES												
1	19,000	25,400	18,300	12,500	20,800	13,100	39,600	11,200	18,600	76,200	32,200	18,300
2	19,600	23,800	15,800	12,500	20,500	13,700	36,600	11,200	19,600	76,200	31,100	18,600
3	19,600	22,500	14,900	11,600	19,900	13,400	33,000	11,200	20,500	74,000	28,900	19,300
4	20,200	21,800	13,700	12,500	19,600	13,100	30,400	11,200	20,500	71,700	27,500	19,600
5	20,500	21,500	13,400	12,200	19,600	12,200	28,900	10,900	23,100	67,400	26,500	19,300
6	21,200	21,200	12,500	12,200	19,000	10,600	26,100	10,900	25,400	54,900	25,800	18,600
7	21,800	21,200	12,500	11,600	19,300	9,400	23,400	11,600	33,800	44,000	25,400	18,300
8	22,500	21,500	14,300	10,900	18,300	9,400	21,200	12,500	47,200	37,900	23,100	18,600
9	22,100	21,200	14,000	10,600	18,300	10,300	20,500	13,100	48,900	36,200	21,500	19,000
10	21,800	21,200	11,900	9,700	17,700	12,500	20,200	13,400	51,800	34,600	20,200	20,200
11	21,200	21,200	11,200	9,700	16,800	19,300	19,300	13,400	58,700	33,400	19,300	21,800
12	20,500	21,800	11,600	10,300	15,800	23,100	18,000	12,800	60,000	33,400	19,300	22,500
13	19,600	22,800	12,500	11,200	15,500	29,300	17,400	12,500	60,600	34,600	19,600	22,500
14	19,600	24,100	14,900	12,200	15,200	40,100	17,100	11,900	63,300	36,600	20,800	22,800
15	19,300	25,100	14,600	11,900	16,800	51,800	16,800	10,900	56,800	37,100	21,200	23,100
16	19,000	25,400	15,200	12,500	19,300	47,200	16,800	10,600	49,500	37,500	24,100	24,100
17	19,000	25,800	15,500	12,500	19,300	66,000	16,200	10,300	44,000	36,600	23,100	25,800
18	19,000	25,800	14,900	12,800	17,700	80,100	15,500	10,300	42,000	36,200	22,800	27,200
19	19,900	25,400	15,500	14,000	17,400	86,400	15,200	10,000	41,500	37,500	22,800	27,500
20	20,500	25,400	16,500	15,200	14,900	98,600	14,300	10,600	40,500	37,100	22,100	26,800
21	21,500	24,800	17,400	16,500	14,900	84,800	13,700	11,900	39,600	37,500	22,100	27,200
22	24,800	25,400	17,400	17,400	14,900	74,700	13,700	13,100	41,000	37,900	22,100	27,200
23	28,900	25,400	18,000	18,000	14,600	73,200	13,100	14,600	41,000	39,200	22,500	27,500
24	30,000	24,800	17,400	19,000	15,200	74,000	12,800	15,500	38,300	41,000	21,500	27,800
25	29,600	24,800	15,800	19,600	16,200	79,400	12,500	17,400	35,800	41,000	21,200	28,600
26	29,300	22,800	15,800	19,300	15,200	78,600	12,200	18,600	33,400	40,100	20,800	29,600
27	28,600	21,800	16,200	19,600	14,600	73,200	12,200	19,900	31,100	38,800	20,200	30,400
28	28,200	21,500	17,100	21,200	14,000	58,000	11,900	19,900	28,900	37,500	19,900	30,400
29	27,800	20,800	14,900	22,800	---	54,900	11,600	20,200	33,400	36,200	19,000	30,000
30	27,200	19,900	14,600	22,500	---	55,500	11,600	19,300	66,000	34,600	18,600	28,900
31	26,500	---	14,000	21,800	---	45,100	---	19,000	---	33,400	18,300	---
TOTAL	708,300	696,100	462,300	456,300	481,300	1,411,000	571,800	419,900	1,214,800	1,350,300	703,500	721,500
MEAN	22,850	23,200	14,910	14,720	17,190	45,520	19,060	13,550	40,490	43,560	22,690	24,050
MAX	30,000	25,800	18,300	22,800	20,800	98,600	39,600	20,200	66,000	76,200	32,200	30,400
MIN	19,000	19,900	11,200	9,700	14,000	9,400	11,600	10,000	18,600	33,400	18,300	18,300
AC-FT	1,405,000	1,381,000	917,000	905,100	954,700	2,799,000	1,134,000	832,900	2,410,000	2,678,000	1,395,000	1,431,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1945 TO SEPTEMBER 1946 DAILY MEAN VALUES												
1	28,200	27,800	14,600	4,600	8,700	8,100	24,300	13,200	24,300	45,900	20,500	24,300
2	28,500	26,500	9,900	4,600	8,300	8,500	18,600	14,600	34,100	44,600	19,100	24,000
3	29,300	25,800	10,300	4,700	8,300	9,500	17,100	16,800	32,000	49,100	18,600	24,000
4	28,500	24,600	9,100	4,600	8,500	9,500	16,100	32,000	28,900	51,100	18,100	24,300
5	28,200	23,700	7,900	4,700	8,300	9,700	16,600	26,100	32,400	44,600	17,800	24,000
6	27,100	23,100	7,200	4,400	8,300	9,700	17,100	23,400	37,200	39,600	17,300	24,000
7	26,100	22,200	7,000	4,400	8,100	10,600	17,600	21,900	36,300	36,700	16,300	24,300
8	25,200	21,900	6,600	4,900	8,100	12,100	16,800	19,700	34,500	35,400	15,600	24,300
9	25,200	21,100	5,500	5,300	8,100	12,800	16,600	18,100	32,000	35,400	14,900	24,000
10	25,200	20,500	5,800	5,800	7,900	13,700	15,800	18,100	29,600	34,500	14,200	23,700
11	25,500	20,000	6,800	6,100	7,500	15,100	15,400	19,700	27,800	34,500	13,700	24,300
12	26,100	17,800	7,300	6,400	7,300	16,100	15,100	21,600	26,800	33,600	12,800	24,900
13	26,100	15,400	7,900	6,600	7,200	21,900	15,100	21,900	26,100	34,100	12,100	25,200
14	26,100	12,800	8,500	7,000	6,800	24,600	14,900	21,900	30,400	36,300	12,100	25,800
15	26,500	11,700	7,700	8,100	6,400	29,300	14,600	20,500	46,500	37,700	13,200	25,500
16	26,100	11,200	6,000	8,700	6,600	23,100	14,400	19,400	49,800	38,600	16,600	28,200
17	25,800	11,200	6,800	9,500	6,600	22,500	13,900	18,600	49,800	39,100	20,200	36,700
18	25,800	11,200	8,300	10,100	6,800	21,900	13,200	18,400	56,300	41,200	21,900	37,200
19	25,200	11,000	9,300	11,200	7,000	21,400	13,200	18,600	69,200	42,900	22,500	33,600
20	25,500	10,600	9,100	11,900	7,200	26,800	12,800	19,100	79,900	37,700	22,200	28,900
21	25,200	10,100	8,100	11,900	7,300	34,900	12,300	19,400	72,000	33,200	22,200	26,800
22	24,900	9,500	7,300	11,700	7,500	37,700	11,900	19,100	63,000	30,400	22,500	26,100
23	24,600	9,700	6,800	11,200	7,700	31,200	11,700	19,400	54,000	29,300	23,700	25,200
24	24,900	9,500	6,300	10,800	7,700	26,500	11,700	20,000	51,100	29,600	24,900	25,500
25	25,500	9,900	6,300	10,800	7,700	26,500	11,400	27,500	54,800	32,000	25,500	26,500
26	27,200	11,200	6,100	10,600	8,100	27,100	11,200	32,000	54,000	33,600	24,900	27,500
27	28,200	12,800	6,100	10,300	8,100	26,500	11,000	24,900	52,600	31,600	24,600	28,200
28	29,300	15,800	5,800	9,300	7,900	25,200	10,600	22,200	49,800	28,200	25,200	28,200
29	30,000	17,100	5,200	8,900	---	34,100	11,000	21,600	48,400	25,500	25,200	27,500
30	30,000	14,900	4,900	8,900	---	46,500	12,100	21,900	49,100	23,700	24,900	26,500
31	29,300	---	4,700	8,900	---	35,800	---	23,400	---	21,900	24,900	---
TOTAL	829,300	490,600	229,200	246,900	214,000	678,900	434,100	655,000	1,332,700	1,111,600	608,200	799,200
MEAN	26,750	16,350	7,394	7,965	7,643	21,900	14,470	21,130	44,420	35,860	19,620	26,640
MAX	30,000	27,800	14,600	11,900	8,700	46,500	24,300	32,000	79,900	51,100	25,500	37,200
MIN	24,600	9,500	4,700	4,400	6,400	8,100	10,600	13,200	24,300	21,900	12,100	23,700
AC-FT	1,645,000	973,100	454,600	489,700	424,500	1,347,000	861,000	1,299,000	2,643,000	2,205,000	1,206,000	1,585,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1946 TO SEPTEMBER 1947 DAILY MEAN VALUES												
1	26,400	20,500	4,180	7,200	9,700	15,000	230,000	33,200	38,200	84,000	38,200	29,300
2	25,400	20,800	3,910	7,800	9,700	15,000	138,000	35,000	36,800	84,000	38,200	28,900
3	24,400	20,800	5,400	8,400	9,700	15,300	89,700	34,500	35,000	74,400	38,200	28,900
4	24,100	20,500	4,580	8,800	9,100	15,700	63,900	35,400	34,500	72,700	37,700	28,900
5	24,100	21,100	5,400	9,400	9,100	16,400	60,200	35,000	40,200	71,900	35,900	28,200
6	23,800	21,400	5,530	9,800	8,800	16,800	59,400	33,200	47,700	66,300	34,500	27,500
7	24,100	21,600	6,100	10,100	9,400	17,100	62,400	32,800	48,300	58,700	33,200	27,100
8	24,400	20,500	6,500	10,600	9,800	17,100	54,400	31,600	41,300	51,600	32,800	27,100
9	28,200	18,800	6,600	10,700	10,600	16,400	47,700	32,800	40,200	47,100	34,500	28,600
10	28,600	17,800	6,700	10,900	10,900	14,600	44,100	34,100	46,500	45,200	36,800	30,400
11	28,900	16,800	6,700	10,900	11,300	13,800	40,700	34,500	63,200	45,900	38,200	31,600
12	37,700	16,400	6,500	10,700	11,200	12,300	40,700	36,300	63,200	47,700	38,700	32,000
13	40,700	15,700	6,500	10,300	10,900	10,700	46,500	52,300	51,600	53,000	42,400	32,400
14	35,900	15,000	6,600	9,700	10,400	9,400	57,900	53,700	47,700	57,200	42,400	32,000
15	32,000	14,600	6,900	8,800	10,300	9,100	55,100	54,400	46,500	57,200	40,200	32,400
16	30,400	14,400	7,400	8,700	11,200	9,200	55,800	60,200	47,700	55,100	39,700	32,400
17	29,300	14,200	8,100	8,500	12,200	9,400	56,500	64,700	55,800	53,000	39,200	32,400
18	28,200	13,600	9,000	8,100	13,400	9,500	57,900	64,700	57,900	52,300	37,700	32,000
19	26,400	13,200	10,000	7,800	12,900	9,800	55,100	62,400	56,500	53,700	37,200	31,600
20	24,800	12,700	12,000	7,400	13,200	10,100	48,300	55,100	53,000	53,000	37,700	31,200
21	24,100	12,300	12,900	7,300	14,200	12,700	43,500	50,300	54,400	50,900	38,700	31,600
22	24,400	10,100	12,900	7,200	15,300	17,800	41,300	45,900	67,800	47,100	37,700	32,800
23	25,100	7,560	13,200	7,300	15,500	19,100	37,200	44,100	96,800	44,100	36,300	33,700
24	24,800	6,340	12,700	7,700	15,000	22,200	36,300	42,400	137,000	41,800	35,400	34,100
25	24,100	4,990	12,300	8,400	14,200	27,100	36,800	42,400	156,000	39,700	34,500	34,500
26	23,500	5,120	11,000	8,500	13,800	27,500	36,300	44,700	141,000	39,200	33,200	34,100
27	22,800	4,180	10,300	8,700	14,400	35,000	35,400	45,200	131,000	39,200	32,400	34,100
28	22,200	4,180	9,200	8,800	14,400	86,800	34,100	43,500	121,000	38,700	31,600	33,700
29	21,900	4,320	5,500	8,700	---	51,600	33,700	40,200	107,000	38,200	30,800	34,500
30	21,100	4,580	3,900	8,800	---	45,200	33,700	38,700	92,600	37,700	30,400	34,500
31	20,800	---	6,900	9,200	---	159,000	---	38,700	---	38,200	29,700	---
TOTAL	822,600	414,070	245,400	275,200	330,600	766,700	1,732,600	1,352,000	2,056,400	1,638,800	1,124,100	942,500
MEAN	26,540	13,800	7,916	8,877	11,810	24,730	57,750	43,610	68,550	52,860	36,260	31,420
MAX	40,700	21,600	13,200	10,900	15,500	159,000	230,000	64,700	156,000	84,000	42,400	34,500
MIN	20,800	4,180	3,900	7,200	8,800	9,100	33,700	31,600	34,500	37,700	29,700	27,100
AC-FT	1,632,000	821,300	486,800	545,900	655,700	1,521,000	3,437,000	2,682,000	4,079,000	3,251,000	2,230,000	1,869,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1947 TO SEPTEMBER 1948 DAILY MEAN VALUES												
1	34,100	35,400	11,000	12,800	9,300	11,900	58,700	31,200	44,600	70,200	36,700	28,900
2	34,100	34,900	11,700	13,500	8,900	11,900	61,200	29,300	44,000	72,000	36,700	28,200
3	33,600	34,500	12,100	14,200	8,900	12,300	61,200	28,500	47,100	69,200	35,400	28,500
4	33,600	34,100	12,100	13,700	8,700	13,200	71,100	30,000	52,600	63,000	34,900	28,900
5	34,500	34,500	11,200	13,700	8,900	14,200	87,200	34,100	56,300	58,700	35,800	28,900
6	34,900	35,400	11,200	13,000	9,100	14,900	73,000	37,200	63,000	54,000	35,800	28,900
7	34,100	35,400	11,400	13,000	9,300	15,400	56,300	34,900	67,400	51,800	33,600	28,900
	32,800	34,100	12,600	12,800	9,700	15,800	61,200	33,200	67,400	51,800	32,400	28,500
	32,000	32,800	14,200	12,100	10,100	17,100	68,300	31,600	73,000	54,000	34,500	28,200
	32,000	31,200	16,800	12,100	8,700	18,600	51,800	32,400	74,900	56,300	34,100	28,200
11	32,800	28,200	18,600	11,700	10,600	19,700	40,700	31,200	76,900	58,700	35,800	28,200
12	34,100	26,800	18,900	11,200	11,000	20,000	36,700	29,300	77,900	59,600	35,400	28,200
13	36,300	25,500	17,600	10,800	11,000	20,000	33,200	28,900	76,900	57,900	37,200	27,800
14	37,200	23,400	15,800	10,300	10,300	20,500	32,400	29,600	74,900	51,100	40,200	28,500
15	37,700	21,600	15,100	9,900	9,900	21,600	31,600	29,600	71,100	49,100	41,800	28,500
16	37,200	20,200	13,500	9,900	9,900	23,400	31,200	28,900	68,300	54,000	40,200	28,200
17	36,300	18,600	13,700	9,900	9,100	23,700	31,600	28,200	71,100	63,000	40,200	27,800
18	35,800	16,600	12,600	10,300	8,500	24,300	38,200	28,200	75,900	69,200	38,600	27,800
19	35,800	16,600	12,600	10,300	8,700	27,100	38,600	27,800	72,000	60,400	37,700	28,500
20	35,400	15,400	11,200	9,500	8,700	33,600	37,700	27,800	67,400	54,800	37,700	28,900
21	35,400	14,400	9,900	9,100	9,300	41,200	47,800	26,800	67,400	53,300	36,700	29,300
22	36,300	12,800	9,300	9,500	9,700	47,100	60,400	25,200	65,600	52,600	35,800	29,600
23	37,200	13,200	8,700	10,100	9,900	46,500	67,400	24,300	71,100	54,000	34,900	29,600
24	36,300	14,400	8,500	10,100	9,700	78,300	43,500	23,700	80,900	54,800	34,900	30,000
25	35,800	13,700	8,700	10,100	9,500	70,200	37,700	23,700	74,900	75,900	34,500	31,200
26	35,400	13,200	9,300	10,100	9,900	51,800	38,600	23,700	63,000	72,000	33,600	32,000
27	34,900	12,800	9,900	10,300	10,300	49,800	37,700	23,700	58,700	55,500	33,200	31,600
28	35,800	11,700	11,000	10,300	11,200	51,100	37,700	44,800	58,700	46,500	32,400	31,200
29	36,700	11,400	11,700	10,100	11,400	56,300	37,200	61,200	60,400	41,800	32,000	31,600
30	36,300	11,400	11,900	9,900	---	60,400	34,500	58,700	66,500	39,100	30,800	32,400
31	35,800	---	12,300	9,900	---	60,400	---	50,400	---	37,700	29,600	---
TOTAL	1,090,200	684,200	385,100	344,200	280,200	992,300	1,444,400	998,100	1,989,900	1,762,000	1,103,100	877,000
MEAN	35,170	22,810	12,420	11,100	9,662	32,010	48,150	32,200	66,330	56,840	35,580	29,230
MAX	37,700	35,400	18,900	14,200	11,400	78,300	87,200	61,200	80,900	75,900	41,800	32,400
MIN	32,000	11,400	8,500	9,100	8,500	11,900	31,200	23,700	44,000	37,700	29,600	27,800
AC-FT	2,162,000	1,357,000	763,800	682,700	555,800	1,968,000	2,865,000	1,980,000	3,947,000	3,495,000	2,188,000	1,740,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1948 TO SEPTEMBER 1949 DAILY MEAN VALUES												
1	36,300	36,300	17,800	9,500	12,300	12,600	64,700	28,900	34,500	36,700	27,500	25,800
2	40,200	37,200	17,800	10,800	12,300	12,600	83,000	28,600	36,300	36,300	27,800	25,500
3	39,100	37,200	17,800	11,400	12,500	12,300	121,000	28,600	32,800	35,400	26,800	25,500
4	37,200	35,400	17,600	11,400	12,300	12,300	142,000	29,300	31,200	34,100	25,800	25,500
5	36,300	34,500	16,000	11,400	12,300	14,600	180,000	29,700	30,000	33,200	25,200	25,500
6	36,300	34,900	14,000	11,700	12,600	18,900	171,000	28,200	29,600	32,400	24,900	25,800
7	38,200	35,400	12,000	11,900	13,000	23,100	170,000	27,100	35,400	32,400	24,300	25,800
8	40,200	35,800	10,500	11,400	13,000	28,200	167,000	26,800	41,200	31,600	24,300	25,500
9	39,600	35,400	10,000	11,000	13,200	30,400	108,000	27,100	40,200	30,000	25,200	25,500
10	37,700	34,100	9,000	11,400	13,500	31,600	77,800	27,800	38,200	28,900	25,800	25,800
11	36,300	32,400	7,500	11,200	12,800	32,000	64,700	27,800	36,300	28,500	25,800	25,800
12	35,800	30,800	6,500	11,900	12,800	33,200	55,800	27,800	35,400	27,800	25,500	25,800
13	35,400	29,300	5,500	12,600	12,600	34,100	47,700	27,100	35,400	27,800	25,200	25,800
14	35,400	27,500	4,500	13,000	12,800	31,200	39,700	26,500	32,800	27,500	25,500	25,800
15	35,400	26,100	3,500	12,300	12,600	26,800	35,000	26,100	31,600	28,500	26,100	25,800
16	35,400	24,900	3,500	12,300	12,300	24,000	31,600	26,100	33,200	30,000	26,800	26,100
17	36,300	23,700	3,000	12,600	12,800	22,200	29,700	25,200	44,600	30,400	27,500	26,500
18	36,300	22,500	3,000	12,100	12,300	20,500	28,900	24,000	47,100	30,400	28,200	26,800
19	36,300	21,400	4,300	12,200	12,100	19,700	27,800	24,300	51,100	29,300	27,500	27,100
20	36,700	20,000	4,600	12,200	12,100	19,400	27,100	24,900	57,100	28,200	27,100	27,800
21	37,700	19,100	5,200	12,700	11,900	27,000	26,400	25,500	54,000	27,500	26,800	27,800
22	37,700	18,400	5,300	12,700	11,700	37,000	27,500	26,800	50,400	27,500	26,100	27,500
23	36,300	18,600	5,500	12,700	12,100	48,000	30,400	28,200	46,500	27,100	25,200	27,100
24	34,900	18,600	5,500	11,800	12,300	60,000	32,400	41,200	42,900	27,100	25,200	26,100
25	34,100	18,400	6,000	12,000	12,600	56,300	31,200	42,900	40,700	27,500	25,500	25,500
26	33,600	18,600	6,500	12,000	12,600	65,600	29,700	43,500	39,600	26,800	25,500	25,200
27	33,600	18,600	7,000	12,100	12,800	71,100	28,200	40,700	38,200	25,800	26,100	24,900
28	33,600	18,400	7,500	11,900	12,100	67,800	27,500	36,700	37,200	24,900	26,800	24,900
29	34,900	18,100	8,000	13,000	---	67,100	27,800	33,600	36,300	25,200	27,100	24,600
30	34,900	18,100	8,300	12,600	---	78,600	28,900	32,000	36,700	26,800	26,800	24,300
31	35,400	---	8,900	12,600	---	67,100	---	32,800	---	27,500	26,100	---
TOTAL	1,127,100	799,700	262,100	370,400	350,300	1,105,300	1,962,500	925,800	1,176,500	913,100	810,000	777,400
MEAN	36,360	26,660	8,455	11,950	12,510	35,650	65,420	29,860	39,220	29,450	26,130	25,910
MAX	40,200	37,200	17,800	13,000	13,500	78,600	180,000	43,500	57,100	36,700	28,200	27,800
MIN	33,600	18,100	3,000	9,500	11,700	12,300	26,400	24,000	29,600	24,900	24,300	24,300
AC-FT	2,236,000	1,586,000	519,900	734,700	694,800	2,192,000	3,893,000	1,836,000	2,334,000	1,811,000	1,607,000	1,542,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1949 TO SEPTEMBER 1950 DAILY MEAN VALUES												
1	24,000	26,500	14,900	6,700	7,800	7,700	85,100	43,200	25,400	60,400	26,500	29,300
2	24,000	26,500	14,600	6,700	7,800	7,700	73,000	40,800	24,400	52,600	26,500	29,300
3	24,000	25,200	13,700	6,500	7,800	8,000	57,100	40,600	24,400	49,100	26,500	29,300
4	24,300	23,700	13,500	6,700	7,500	8,300	47,800	38,400	26,300	45,900	26,500	29,300
5	24,300	22,800	13,500	7,000	7,500	10,300	90,400	38,200	27,700	41,800	27,100	28,500
6	24,600	21,600	13,700	8,100	7,500	10,300	76,700	37,600	26,900	40,700	27,100	28,200
7	25,200	20,800	13,500	8,100	7,500	10,600	94,200	41,700	26,100	40,700	27,500	28,200
8	25,200	19,500	13,200	8,000	7,500	11,400	83,700	50,200	26,600	40,700	28,500	27,800
9	24,600	18,600	13,200	8,000	8,700	9,700	90,600	58,300	26,700	43,500	29,300	28,200
10	25,800	18,000	13,000	8,000	8,900	8,500	82,400	54,900	27,000	48,400	30,000	28,200
11	27,500	17,300	10,300	8,000	8,900	8,300	69,800	58,300	26,900	49,100	30,000	28,500
12	26,500	17,300	9,000	8,100	9,100	8,500	62,400	54,400	27,700	47,100	28,900	28,200
13	26,100	17,300	8,000	8,200	9,100	8,500	55,600	48,400	28,800	44,600	28,900	28,200
14	26,100	17,100	7,200	8,200	8,100	8,500	65,000	46,700	39,100	42,900	29,600	27,800
15	26,500	16,100	6,000	8,200	7,900	8,500	83,700	48,200	50,200	42,900	30,000	27,800
16	26,800	16,100	5,300	8,300	8,100	8,500	118,000	46,700	48,800	42,300	34,900	28,200
17	26,800	15,600	5,300	8,300	8,300	9,300	146,000	43,500	44,000	42,900	37,700	29,600
18	26,500	15,400	4,700	8,400	8,900	10,100	179,000	38,800	38,700	42,300	34,900	30,800
19	26,100	15,100	4,700	8,600	8,300	10,300	214,000	35,300	36,500	41,200	34,100	30,400
20	26,500	14,900	4,500	8,800	7,700	11,000	255,000	34,200	35,000	40,700	33,600	32,000
21	26,100	14,900	4,500	9,000	7,300	13,200	265,000	33,500	38,400	40,700	33,600	38,200
22	25,500	14,600	4,300	9,100	7,300	14,600	205,000	31,000	51,800	39,100	32,400	36,700
23	25,500	14,200	4,300	8,900	7,500	15,800	122,000	30,000	53,300	37,200	30,400	36,700
24	26,100	14,400	4,500	8,600	7,600	22,500	88,700	29,400	57,900	34,900	30,000	35,400
25	26,800	14,600	4,800	8,300	7,200	40,200	78,400	28,400	65,200	33,200	29,600	33,200
26	28,900	14,600	5,000	8,000	7,200	57,100	67,200	27,100	63,100	31,200	29,300	31,200
27	30,400	14,900	5,300	7,800	7,200	55,500	57,800	26,100	56,500	29,600	28,900	30,000
28	30,400	14,900	5,500	7,800	7,300	45,200	51,300	25,700	53,900	28,200	28,500	29,300
29	29,300	14,900	6,000	7,800	---	44,000	48,800	25,600	56,100	27,100	28,900	29,300
30	28,500	14,900	6,500	7,800	---	46,500	46,800	26,100	64,900	26,500	29,300	28,900
31	27,500	---	6,700	7,800	---	65,600	---	26,100	---	26,500	29,300	---
TOTAL	816,400	532,300	259,200	247,800	221,500	604,200	3,060,500	1,207,400	1,198,300	1,254,000	928,300	906,700
MEAN	26,340	17,740	8,361	7,994	7,911	19,490	102,000	38,950	39,940	40,450	29,950	30,220
MAX	30,400	26,500	14,900	9,100	9,100	65,600	265,000	58,300	65,200	60,400	37,700	38,200
MIN	24,000	14,200	4,300	6,500	7,200	7,700	46,800	25,600	24,400	26,500	26,500	27,800
AC-FT	1,619,000	1,056,000	514,100	491,500	439,300	1,198,000	6,071,000	2,395,000	2,377,000	2,487,000	1,841,000	1,798,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1950 TO SEPTEMBER 1951 DAILY MEAN VALUES												
1	28,200	34,900	5,500	17,600	13,900	15,800	40,200	25,800	41,200	45,200	32,800	41,200
2	27,100	35,400	5,500	17,600	14,200	15,800	39,600	25,200	51,800	41,200	33,600	53,300
3	27,100	35,400	5,600	17,600	14,600	17,300	43,500	25,200	46,500	38,200	34,100	46,500
4	27,800	35,400	5,700	17,600	14,200	17,300	56,300	25,200	43,500	37,700	33,200	41,800
5	27,800	35,400	5,700	17,800	13,700	17,300	87,200	25,500	54,800	37,200	32,000	42,300
6	29,300	35,400	6,300	17,600	13,500	17,300	109,000	26,800	57,100	35,800	31,600	43,500
7	30,400	37,200	7,500	17,600	12,800	17,800	109,000	28,200	53,300	34,900	32,800	41,800
8	32,000	39,100	8,500	17,300	12,600	17,300	106,000	29,600	56,300	34,100	34,500	41,200
9	33,600	38,200	9,300	16,800	12,800	17,100	85,100	31,200	53,300	33,600	37,200	41,200
10	33,200	36,300	11,000	16,100	11,900	17,100	107,000	32,400	50,400	35,400	38,600	43,500
11	32,400	33,500	12,500	16,100	11,900	16,300	99,600	31,600	44,600	36,300	38,200	43,500
12	32,400	31,000	14,000	16,100	11,900	15,800	77,900	31,200	40,200	34,900	37,700	41,800
13	32,400	28,500	15,000	16,300	11,700	15,100	74,000	30,000	36,300	33,600	36,700	38,600
14	32,000	26,800	16,000	15,600	11,700	14,600	71,100	28,500	34,500	34,500	34,100	36,300
15	31,600	25,500	17,500	15,400	11,700	13,700	68,300	27,500	33,600	37,200	36,700	35,800
16	30,800	24,300	17,000	14,700	11,200	13,200	51,100	26,800	32,800	38,200	39,100	35,400
17	30,400	22,500	16,600	13,700	11,200	13,000	40,200	25,800	33,200	37,200	41,800	34,900
18	29,600	19,700	15,400	13,500	11,200	12,600	36,700	25,500	34,100	35,800	43,500	34,900
19	29,600	18,100	14,900	12,800	11,400	11,900	35,800	27,100	31,600	34,500	43,500	35,400
20	29,600	16,300	14,200	12,300	11,400	11,200	34,500	28,500	31,200	34,100	40,200	34,900
21	30,800	13,900	13,500	11,700	11,700	10,800	33,600	28,900	31,200	35,400	38,200	34,100
22	32,000	9,700	13,000	11,900	11,900	10,800	32,400	29,300	33,200	36,300	36,700	33,600
23	33,200	5,000	12,800	12,300	12,300	10,600	32,000	29,300	35,800	36,300	35,400	32,800
24	33,600	5,000	13,200	12,800	12,800	10,300	31,600	31,200	59,600	34,900	35,800	32,800
25	33,200	4,800	13,900	13,000	14,600	10,300	30,800	32,000	64,700	33,200	36,700	33,200
26	32,400	5,000	14,600	13,200	14,200	12,000	30,000	30,400	61,200	32,800	37,200	34,500
27	33,200	5,300	15,100	13,200	14,600	16,000	28,200	28,900	52,600	32,400	36,700	34,900
28	33,200	5,300	16,100	13,500	15,400	20,000	26,800	28,900	47,800	32,400	36,300	36,300
29	33,200	5,500	16,800	13,700	---	25,000	26,500	31,600	47,800	32,400	35,400	37,200
30	33,600	5,700	17,600	13,500	---	40,200	26,500	37,200	47,800	32,400	34,500	41,200
31	34,100	---	17,800	13,700	---	39,100	---	39,100	---	32,400	35,400	---
TOTAL	969,800	674,100	388,100	462,600	357,000	512,600	1,670,500	904,400	1,342,000	1,100,500	1,130,200	1,158,400
MEAN	31,280	22,470	12,520	14,920	12,750	16,540	55,680	29,170	44,730	35,500	36,460	38,610
MAX	34,100	39,100	17,800	17,800	15,400	40,200	109,000	39,100	64,700	45,200	43,500	53,300
MIN	27,100	4,800	5,500	11,700	11,200	10,300	26,500	25,200	31,200	32,400	31,600	32,800
AC-FT	1,924,000	1,337,000	769,800	917,600	708,100	1,017,000	3,313,000	1,794,000	2,662,000	2,183,000	2,242,000	2,298,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1951 TO SEPTEMBER 1952 DAILY MEAN VALUES												
1	41,100	37,200	11,600	7,000	15,400	15,100	45,000	46,700	49,400	35,200	20,600	29,000
2	39,900	36,800	20,400	7,000	15,800	14,500	60,000	44,100	46,400	35,200	20,300	28,000
3	39,200	37,000	55,500	6,900	16,300	13,800	70,000	43,100	44,400	32,800	20,300	28,000
4	42,400	37,000	32,500	7,600	16,500	13,000	132,000	42,000	44,200	30,800	21,600	29,500
5	40,300	38,000	25,000	8,500	16,500	12,400	139,000	41,100	44,200	30,800	22,800	30,000
6	37,200	38,400	21,000	9,400	16,800	12,400	208,000	41,300	43,700	30,800	24,200	29,500
7	36,800	38,400	19,000	10,000	16,800	12,400	210,000	44,900	43,200	30,800	25,200	28,500
8	37,600	38,400	18,000	10,600	17,200	12,100	286,000	53,100	42,800	30,800	25,600	28,000
9	38,400	38,000	17,000	11,800	17,800	12,400	381,000	53,000	41,600	30,400	25,600	28,000
10	38,400	38,000	15,500	12,200	18,500	12,100	436,000	49,600	39,600	30,000	27,000	28,000
11	38,800	37,200	14,000	13,800	19,000	12,100	407,000	48,600	40,800	29,200	28,000	26,000
12	38,400	36,800	9,000	14,400	19,500	12,100	324,000	49,100	44,600	28,400	29,000	25,600
13	36,800	36,400	6,000	15,100	20,000	12,400	234,000	52,600	47,100	28,000	29,500	25,600
14	36,400	36,000	4,000	16,000	20,500	13,200	164,000	52,300	53,800	27,600	29,500	26,500
15	37,200	36,000	4,000	16,700	21,000	13,200	118,000	46,800	65,800	26,400	30,000	27,500
16	38,800	36,000	4,000	17,000	21,000	13,000	100,000	41,400	63,500	24,800	31,100	28,500
17	40,700	36,400	4,000	16,700	20,500	13,200	91,400	38,300	57,500	24,800	30,600	28,500
18	40,700	36,400	4,000	15,700	19,500	15,400	86,400	36,500	53,100	23,600	31,700	28,500
19	40,700	36,800	4,500	15,700	18,500	15,100	80,800	34,900	50,300	22,000	32,300	28,000
20	41,100	36,000	5,000	15,400	17,800	15,100	76,800	33,100	46,500	20,400	31,700	27,500
21	41,900	34,500	5,500	15,400	17,000	14,800	75,800	31,800	43,200	19,200	31,100	27,500
22	42,800	33,700	6,000	15,000	17,000	14,800	75,700	30,500	40,400	18,400	29,500	27,500
23	41,100	32,100	6,500	14,400	17,000	13,000	73,900	30,300	38,000	17,600	28,000	27,500
24	39,200	30,200	7,000	14,800	17,000	13,000	76,400	33,600	37,200	19,200	27,000	28,000
25	38,400	23,000	7,500	15,100	17,800	12,700	80,000	36,500	36,800	22,800	27,000	28,500
26	38,000	13,800	7,500	14,800	18,500	12,400	74,600	35,600	35,600	25,600	27,500	28,500
27	37,600	10,800	8,000	14,800	19,000	12,700	63,800	34,200	34,800	26,400	28,000	27,500
28	37,200	10,200	8,000	15,000	18,200	13,000	57,100	32,200	45,400	26,800	27,500	27,500
29	36,800	10,200	8,000	15,000	17,400	14,100	53,100	31,000	38,000	26,000	26,500	27,500
30	37,200	10,800	7,500	15,000	---	18,000	49,800	39,400	35,200	23,600	28,000	27,000
31	37,600	---	7,000	15,200	---	30,000	---	49,100	---	21,600	28,000	---
TOTAL	1,208,700	950,500	372,500	412,000	523,800	433,500	4,329,600	1,276,700	1,347,100	820,000	844,700	835,700
MEAN	38,990	31,680	12,020	13,290	18,060	13,980	144,300	41,180	44,900	26,450	27,250	27,860
MAX	42,800	38,400	55,500	17,000	21,000	30,000	436,000	53,100	65,800	35,200	32,300	30,000
MIN	36,400	10,200	4,000	6,900	15,400	12,100	45,000	30,300	34,800	17,600	20,300	25,600
AC-FT	2,397,000	1,885,000	738,900	817,200	1,039,000	859,800	8,588,000	2,532,000	2,672,000	1,626,000	1,675,000	1,658,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1952 TO SEPTEMBER 1953 DAILY MEAN VALUES												
1	26,700	25,900	7,000	12,000	13,000	11,000	25,200	29,600	34,700	54,500	27,900	27,200
2	26,500	26,100	7,500	12,000	13,000	11,000	21,700	38,400	39,100	48,500	28,100	27,700
3	26,600	26,400	8,000	12,000	13,000	11,000	21,000	45,000	33,500	45,600	31,400	26,500
4	26,700	26,400	8,500	11,800	13,000	10,500	19,800	45,500	31,700	44,000	29,200	25,800
5	26,900	26,400	8,500	11,800	13,000	10,500	19,700	40,100	29,800	42,800	31,400	26,000
6	27,000	26,300	8,000	11,600	13,000	10,500	19,400	34,100	27,700	40,500	30,800	26,400
7	27,800	26,100	8,000	11,200	13,000	10,500	24,000	29,900	43,600	38,300	30,800	26,700
8	28,600	26,500	8,000	11,000	13,000	10,000	45,200	27,900	61,800	37,300	29,900	26,800
9	28,900	27,000	8,500	10,600	13,000	10,000	44,600	28,600	63,900	36,500	30,000	27,400
10	28,700	27,300	9,000	10,800	13,000	10,000	38,300	28,200	63,000	35,900	29,700	28,300
11	28,600	27,300	8,500	10,800	12,500	11,000	27,000	27,900	60,400	35,400	29,800	29,100
12	29,000	25,000	8,000	10,800	12,500	11,500	20,500	25,600	53,000	35,600	30,100	29,600
13	28,900	23,400	7,000	11,000	12,500	12,000	17,400	24,200	49,300	35,300	30,100	30,000
14	28,900	22,100	6,500	11,300	12,000	14,000	16,400	23,600	48,900	32,900	30,300	30,500
15	29,200	20,700	6,000	11,200	12,000	20,000	15,500	23,500	56,700	30,500	30,400	30,600
16	29,500	20,000	5,800	11,200	12,000	15,700	15,400	23,600	88,500	29,500	29,800	30,600
17	29,400	19,700	6,000	11,200	11,500	16,200	15,500	24,300	101,000	29,300	28,600	29,700
18	28,600	19,500	8,000	11,600	11,500	16,800	15,300	28,100	106,000	30,100	28,000	29,100
19	28,000	18,700	10,000	11,600	12,000	17,500	14,700	32,300	79,200	29,600	27,400	29,100
20	27,800	18,000	11,000	12,300	12,000	25,000	14,700	30,200	76,900	28,800	26,700	29,800
21	28,000	17,100	11,500	12,800	12,000	32,000	14,400	26,700	94,800	27,600	26,700	31,000
22	28,800	17,100	13,000	12,600	12,000	40,000	14,100	24,700	111,000	26,700	25,900	30,400
23	29,100	16,900	14,000	12,300	11,500	43,400	13,900	22,700	102,000	25,800	26,000	29,500
24	29,500	16,800	14,500	12,300	11,500	39,000	13,600	21,600	90,600	24,700	26,400	30,000
25	29,400	16,100	14,500	12,900	12,000	34,300	13,000	20,900	85,200	24,800	27,300	30,500
26	29,100	15,800	14,000	13,000	11,500	28,800	13,400	21,900	82,800	27,200	27,400	30,400
27	28,200	12,000	13,000	13,600	11,000	25,500	14,400	23,500	80,600	28,200	28,400	30,300
28	27,500	9,000	12,000	13,800	11,000	24,600	15,300	23,500	73,200	28,900	29,600	30,200
29	26,200	8,000	11,500	13,500	---	24,600	16,600	24,000	66,000	28,400	28,800	30,200
30	25,700	7,000	11,200	13,200	---	26,700	20,200	23,200	59,900	29,500	27,600	30,400
31	25,600	---	11,000	13,000	---	38,500	---	23,500	---	30,100	26,900	---
TOTAL	869,400	614,600	298,000	370,800	343,000	622,100	600,200	866,800	1,994,800	1,042,800	891,400	869,800
MEAN	28,050	20,490	9,613	11,960	12,250	20,070	20,010	27,960	66,490	33,640	28,750	28,990
MAX	29,500	27,300	14,500	13,800	13,000	43,400	45,200	45,500	111,000	54,500	31,400	31,000
MIN	25,600	7,000	5,800	10,600	11,000	10,000	13,000	20,900	27,700	24,700	25,900	25,800
AC-FT	1,724,000	1,219,000	591,100	735,500	680,300	1,234,000	1,190,000	1,719,000	3,957,000	2,068,000	1,768,000	1,725,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1953 TO SEPTEMBER 1954 DAILY MEAN VALUES												
1	30,400	37,500	16,400	8,500	9,000	18,600	14,700	28,200	28,000	13,700	39,100	39,000
2	30,800	34,600	16,000	8,500	9,000	17,000	13,800	28,200	28,700	14,000	39,600	38,800
3	31,100	32,900	15,900	8,500	9,000	15,000	13,300	27,600	27,000	14,200	39,500	38,800
4	31,100	32,200	15,500	9,000	9,500	13,000	12,800	27,400	25,900	14,400	39,200	39,100
5	31,100	31,800	15,300	9,000	9,800	13,000	12,500	27,600	25,300	14,500	38,500	39,700
6	31,200	31,600	15,200	9,000	10,000	22,000	13,600	27,300	25,600	14,300	38,000	40,400
7	31,600	31,300	13,500	8,000	10,200	20,000	13,900	26,500	25,600	14,700	37,600	40,200
8	31,500	30,800	12,900	7,500	10,300	20,400	17,000	26,100	25,500	16,500	38,000	40,400
9	31,300	30,200	12,600	7,500	10,500	19,700	27,400	25,700	26,200	20,300	38,300	39,300
10	31,200	29,700	12,100	6,000	10,600	20,500	27,400	25,700	28,500	23,300	38,800	39,600
11	31,200	29,500	10,600	6,500	10,600	20,100	25,000	25,600	29,600	24,600	39,600	39,600
12	31,800	29,000	10,400	7,000	11,000	18,000	25,500	25,300	35,200	24,200	39,400	39,800
13	32,000	28,000	9,800	7,500	11,000	17,000	29,100	24,600	33,200	24,200	39,300	39,200
14	32,100	26,400	10,300	7,800	10,500	15,000	30,800	23,400	31,200	24,300	39,600	38,700
15	31,800	24,500	10,500	9,500	10,400	14,000	29,800	23,400	28,800	25,700	40,300	38,500
16	31,500	23,400	10,000	9,600	10,200	14,000	28,200	23,400	25,200	27,800	40,600	38,800
17	31,200	22,400	6,500	10,000	10,000	14,900	26,500	23,600	21,100	29,000	40,000	38,900
18	31,500	21,800	6,000	10,500	10,000	15,200	25,700	24,000	18,100	28,900	39,000	39,200
19	32,000	20,900	6,000	10,000	10,000	18,000	26,400	24,100	16,200	29,000	38,800	39,100
20	32,800	19,100	5,500	9,300	12,600	22,200	27,000	23,700	14,800	31,000	39,700	39,200
21	34,100	19,200	5,500	9,000	12,800	24,800	27,200	23,400	14,500	34,000	40,000	38,900
22	33,500	17,900	5,500	9,000	12,900	24,700	27,100	23,700	14,000	34,700	40,500	38,800
23	32,300	17,400	5,500	9,000	11,400	25,200	27,100	24,100	13,600	34,500	39,200	39,200
24	31,300	17,300	5,500	8,800	14,400	26,000	27,100	24,300	13,300	34,600	38,200	39,100
25	31,700	17,000	7,500	8,500	14,800	26,900	27,300	24,800	13,600	35,000	38,900	39,000
26	32,700	17,100	6,500	8,800	14,000	24,800	26,800	26,300	13,200	35,400	39,300	39,000
27	33,700	17,400	6,000	8,800	13,700	21,100	26,400	26,900	12,600	35,600	39,000	38,800
28	37,100	16,900	7,500	9,000	14,700	19,300	26,700	26,500	12,400	36,700	38,900	38,600
29	46,200	16,800	8,500	9,000	---	18,000	27,100	26,500	13,000	38,300	38,800	38,200
30	43,800	16,500	8,200	9,000	---	16,800	28,100	26,700	13,600	38,600	38,800	38,400
31	41,000	---	7,800	9,000	---	16,000	---	27,400	---	38,400	38,700	---
TOTAL	1,026,600	741,100	305,000	267,100	312,900	591,200	711,300	792,000	653,500	824,400	1,213,200	1,174,300
MEAN	33,120	24,700	9,839	8,616	11,170	19,070	23,710	25,550	21,780	26,590	39,140	39,140
MAX	46,200	37,500	16,400	10,500	14,800	26,900	30,800	28,200	35,200	38,600	40,600	40,400
MIN	30,400	16,500	5,500	6,000	9,000	13,000	12,500	23,400	12,400	13,700	37,600	38,200
AC-FT	2,036,000	1,470,000	605,000	529,800	620,600	1,173,000	1,411,000	1,571,000	1,296,000	1,635,000	2,406,000	2,329,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1954 TO SEPTEMBER 1955 DAILY MEAN VALUES												
1	38,600	18,100	9,400	6,190	6,220	7,360	9,360	25,000	42,000	30,900	22,000	29,800
2	38,800	17,700	6,700	5,800	6,190	7,920	9,160	26,500	38,300	30,800	22,000	29,600
3	39,200	16,900	5,500	6,700	6,370	8,120	10,800	26,200	35,800	30,800	22,000	29,400
4	39,200	16,800	4,990	7,680	6,580	8,280	12,000	24,800	34,900	30,800	21,400	29,300
5	39,200	16,700	4,750	5,980	6,550	8,360	12,700	25,500	31,200	29,500	21,200	29,300
6	38,900	16,700	4,660	6,640	7,080	8,440	16,500	26,100	28,100	30,500	21,100	29,200
7	37,600	16,800	5,440	6,910	7,680	8,120	17,200	26,300	24,500	31,200	21,000	29,200
8	34,900	16,700	5,890	6,850	7,160	8,360	15,000	26,500	21,200	31,200	21,400	29,000
9	33,200	16,600	6,070	6,700	6,970	9,080	13,900	26,800	19,500	31,300	21,800	28,900
10	32,700	16,500	7,760	6,610	7,440	10,800	12,800	29,000	19,200	31,900	21,300	28,900
11	32,600	16,300	7,360	6,310	7,520	10,800	12,100	32,100	18,600	31,600	20,900	28,900
12	32,400	15,900	8,280	7,040	8,200	12,800	11,800	33,900	18,500	31,700	20,500	28,800
13	32,800	15,100	7,520	9,160	8,600	13,600	11,600	33,600	19,000	32,800	20,400	28,200
14	33,300	14,500	6,280	7,800	7,800	12,400	11,300	33,900	20,200	34,800	21,300	27,600
15	33,200	14,100	6,310	8,320	8,040	12,400	11,100	37,800	22,000	36,900	20,500	27,200
16	33,200	13,200	6,550	8,560	8,120	11,300	11,000	42,000	24,700	37,000	20,800	27,000
17	33,200	12,400	6,640	7,760	8,200	11,500	11,200	45,600	26,800	36,200	22,800	27,400
18	32,600	12,200	6,640	7,400	6,760	12,000	10,900	46,600	27,200	34,000	25,800	27,400
19	31,600	12,100	7,200	6,970	7,120	11,000	10,800	45,600	27,400	32,000	27,000	27,800
20	31,400	12,000	8,200	7,040	7,920	10,500	10,600	45,400	25,200	30,900	27,600	29,500
21	31,200	11,700	9,120	5,830	7,880	10,000	10,200	44,600	22,500	30,900	27,900	31,700
22	31,400	11,600	9,240	6,340	7,640	8,600	10,800	43,900	20,600	31,100	28,400	38,700
23	31,600	11,500	9,200	7,760	7,720	7,600	11,400	43,800	19,800	31,300	28,600	43,000
24	31,700	11,100	10,800	7,440	8,360	6,940	12,900	43,800	19,000	31,400	28,600	36,700
25	31,700	11,000	9,640	6,970	8,560	6,310	13,500	44,400	19,000	31,000	29,000	35,400
26	31,600	10,900	10,300	6,970	7,280	5,320	14,600	45,600	23,300	30,800	29,300	34,000
27	28,900	10,600	9,960	7,440	6,910	7,600	17,200	46,900	27,600	31,600	29,500	33,300
28	25,200	10,400	9,800	7,800	6,700	8,560	18,800	47,700	29,700	30,400	29,500	32,900
29	22,500	10,200	8,000	7,440	---	8,680	20,400	48,600	29,700	28,000	29,600	33,800
30	20,400	10,100	6,790	6,760	---	7,880	22,500	47,900	30,600	25,100	29,600	34,700
31	18,700	---	6,730	6,640	---	8,040	---	45,000	---	23,100	29,900	---
TOTAL	1,003,500	416,400	231,720	219,810	207,570	288,670	394,120	1,161,400	766,100	971,500	762,700	926,600
MEAN	32,370	13,880	7,475	7,091	7,413	9,312	13,140	37,460	25,540	31,340	24,600	30,890
MAX	39,200	18,100	10,800	9,160	8,600	13,600	22,500	48,600	42,000	37,000	29,900	43,000
MIN	18,700	10,100	4,660	5,800	6,190	5,320	9,160	24,800	18,500	23,100	20,400	27,000
AC-FT	1,990,000	825,900	459,600	436,000	411,700	572,600	781,700	2,304,000	1,520,000	1,927,000	1,513,000	1,838,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1955 TO SEPTEMBER 1956 DAILY MEAN VALUES												
1	33,600	32,500	8,800	10,500	8,000	6,300	25,300	25,600	31,800	35,600	27,600	24,200
2	32,900	33,100	6,500	10,400	7,400	6,200	29,600	25,600	31,700	34,400	28,300	23,600
3	31,900	32,800	7,000	10,300	7,600	6,300	31,200	26,200	31,500	33,100	30,600	22,500
4	31,700	32,600	7,400	10,300	7,600	6,800	26,500	28,200	30,800	31,900	31,200	20,400
5	31,900	32,400	7,200	10,500	7,500	6,900	27,400	29,500	30,500	32,200	30,900	20,300
6	31,800	32,000	7,000	10,400	7,500	6,600	34,400	29,100	31,000	33,100	30,700	20,300
7	31,700	31,700	6,800	9,900	8,000	6,600	36,800	28,100	30,900	35,700	31,400	20,700
	31,600	31,400	7,000	9,900	7,800	7,000	32,800	27,800	31,000	34,800	31,600	21,300
	31,400	28,700	6,900	9,800	8,000	7,200	34,100	27,400	32,700	32,800	31,900	21,800
	31,400	26,700	7,400	9,700	7,200	7,400	35,600	27,300	33,000	32,400	32,400	22,000
11	32,000	25,000	8,100	9,400	6,600	7,600	41,700	27,700	31,700	33,400	31,100	22,800
12	32,200	24,200	8,200	9,300	6,400	7,500	35,000	27,900	31,500	32,600	31,900	22,500
13	32,300	20,400	7,900	9,200	6,600	7,400	26,500	29,200	32,000	31,700	31,200	22,400
14	31,400	20,000	7,800	8,900	6,000	7,300	25,800	30,000	32,000	30,900	31,000	22,700
15	31,500	17,100	7,800	8,400	5,500	7,400	26,900	30,200	32,900	30,700	31,000	22,400
16	31,600	13,400	8,000	7,900	5,600	7,600	26,700	30,300	34,200	30,800	30,800	22,200
17	31,600	12,600	8,300	7,800	5,300	8,800	26,400	29,400	35,000	31,700	30,600	22,100
18	31,800	10,900	8,900	8,300	5,400	10,500	26,300	28,600	34,500	32,200	30,200	21,900
19	32,000	11,000	9,500	8,400	5,100	12,000	25,900	28,400	34,000	31,400	30,000	21,900
20	32,000	11,000	10,000	8,100	4,800	22,000	25,600	27,900	35,000	30,800	29,600	22,500
21	31,900	12,900	10,000	7,900	5,000	27,000	25,600	27,000	37,100	30,600	28,000	22,400
22	31,800	12,800	10,000	7,800	5,400	32,000	25,300	26,800	36,700	30,500	26,000	21,500
23	32,100	11,600	10,000	7,700	5,800	38,000	24,800	27,100	36,300	30,300	25,500	19,900
24	32,300	11,000	9,900	7,700	6,000	46,000	24,900	27,600	36,400	30,000	25,800	18,600
25	32,400	10,500	9,900	7,700	6,400	58,700	24,900	27,900	37,000	29,800	25,400	17,900
26	32,700	10,000	10,100	7,800	6,400	45,700	25,200	27,900	37,800	29,400	24,900	17,900
27	33,000	9,700	10,400	8,000	6,800	39,000	26,400	28,100	38,200	29,100	24,500	17,800
28	33,200	9,500	10,300	8,000	6,300	35,700	26,200	29,300	37,600	29,500	24,800	17,400
29	33,100	9,000	10,300	8,000	6,400	25,500	26,200	30,700	36,500	29,600	24,900	17,400
30	32,800	9,000	10,400	8,000	---	21,600	25,600	31,900	35,800	30,300	25,100	17,500
31	32,300	---	10,500	8,000	---	21,800	---	32,200	---	28,700	24,800	---
TOTAL	995,900	585,500	268,300	274,000	188,400	556,400	855,600	880,900	1,017,100	980,000	893,700	628,800
MEAN	32,130	19,520	8,655	8,839	6,497	17,950	28,520	28,420	33,900	31,610	28,830	20,960
MAX	33,600	33,100	10,500	10,500	8,000	58,700	41,700	32,200	38,200	35,700	32,400	24,200
MIN	31,400	9,000	6,500	7,700	4,800	6,200	24,800	25,600	30,500	28,700	24,500	17,400
AC-FT	1,975,000	1,161,000	532,200	543,500	373,700	1,104,000	1,697,000	1,747,000	2,017,000	1,944,000	1,773,000	1,247,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1956 TO SEPTEMBER 1957 DAILY MEAN VALUES												
1	17,900	16,500	13,000	11,500	12,000	13,500	16,500	17,100	25,600	21,000	15,700	24,400
2	17,700	16,800	13,300	11,000	12,000	14,000	17,600	16,000	22,900	19,500	16,000	21,500
3	17,300	16,600	13,700	11,000	12,500	14,000	17,600	14,200	20,600	19,400	16,000	20,800
4	16,800	16,800	14,400	11,000	12,500	14,000	17,300	13,200	17,700	21,200	15,500	18,900
5	15,900	17,000	13,200	11,000	13,000	14,000	16,900	14,600	15,000	20,700	15,400	18,300
6	15,800	16,700	10,300	11,000	13,000	14,000	18,000	16,800	13,600	18,100	15,800	17,900
7	15,600	16,400	6,460	10,500	13,500	14,000	17,800	17,600	13,100	17,200	17,600	16,600
8	15,200	16,400	7,000	10,000	13,500	14,500	19,400	17,300	12,400	17,900	19,200	16,200
9	14,700	16,200	8,000	10,000	13,500	15,000	19,400	16,900	12,300	18,000	20,000	17,200
10	14,500	16,300	7,000	10,000	13,500	15,000	19,500	16,200	14,300	18,000	20,000	18,000
11	14,600	16,400	6,500	10,000	13,500	15,000	19,100	15,800	18,600	17,900	18,900	17,700
12	14,600	16,400	6,500	10,000	13,500	15,000	19,100	15,800	23,400	17,800	19,100	17,400
13	15,100	16,200	6,500	10,000	13,500	15,000	19,400	16,600	23,600	17,300	19,200	16,700
14	15,600	15,200	7,500	10,000	14,000	15,000	19,100	17,700	19,400	16,700	18,500	15,400
15	16,400	14,200	8,500	10,000	13,500	15,000	19,300	18,700	17,000	16,000	18,700	15,400
16	16,600	13,200	9,500	10,000	13,000	16,000	19,200	21,700	19,800	15,700	21,300	15,800
17	16,600	12,500	11,000	10,000	13,000	15,500	19,100	25,700	23,100	15,800	23,800	14,900
18	16,400	12,700	12,000	10,000	13,000	15,000	20,100	26,300	22,200	15,700	24,800	14,400
19	16,200	12,700	11,000	10,000	13,000	15,000	21,300	25,400	21,900	16,800	24,300	15,500
20	16,300	13,000	10,500	9,500	13,000	15,000	24,300	26,400	21,300	17,600	23,900	17,600
21	16,300	13,200	10,000	9,500	13,500	15,500	23,300	31,300	20,200	17,900	23,700	18,300
22	16,100	13,400	10,500	9,500	13,500	15,500	21,100	32,400	18,600	18,800	24,000	18,900
23	15,900	13,800	12,000	9,500	13,500	15,000	21,200	32,100	18,300	18,200	24,400	19,700
24	15,400	14,000	12,000	10,000	13,500	13,800	19,700	31,200	19,200	16,600	24,500	19,900
25	15,100	14,400	11,000	10,500	13,500	13,000	17,000	33,700	20,300	15,900	24,800	20,000
26	15,800	14,600	11,000	10,500	13,500	13,200	15,100	52,500	21,600	16,800	25,000	19,800
27	16,100	14,200	11,000	10,500	13,500	14,000	14,200	61,400	21,900	18,500	24,900	19,300
28	16,400	14,100	10,500	10,500	13,500	14,600	15,400	44,900	20,700	19,500	24,200	17,700
29	16,800	14,000	10,500	10,500	---	15,500	17,000	34,100	20,100	20,100	24,200	16,000
30	17,000	13,200	11,000	11,000	---	16,000	17,900	33,000	21,000	19,200	24,800	14,200
31	16,800	---	12,000	11,500	---	15,600	---	29,200	---	16,400	25,800	---
TOTAL	497,500	447,100	317,360	320,000	370,000	455,200	561,900	785,800	579,700	556,200	654,000	534,400
MEAN	16,050	14,900	10,240	10,320	13,210	14,680	18,730	25,350	19,320	17,940	21,100	17,810
MAX	17,900	17,000	14,400	11,500	14,000	16,000	24,300	61,400	25,600	21,200	25,800	24,400
MIN	14,500	12,500	6,460	9,500	12,000	13,000	14,200	13,200	12,300	15,700	15,400	14,200
AC-FT	986,800	886,800	629,500	634,700	733,900	902,900	1,115,000	1,559,000	1,150,000	1,103,000	1,297,000	1,060,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1957 TO SEPTEMBER 1958 DAILY MEAN VALUES												
1	13,300	16,600	10,800	4,500	15,200	16,600	32,800	21,000	18,600	30,400	9,760	22,500
2	13,100	16,300	11,200	4,500	15,200	15,500	41,600	21,100	18,800	30,800	7,930	23,200
3	12,800	15,100	11,200	4,800	14,500	15,800	38,100	21,200	19,400	31,800	1,230	24,000
4	12,200	12,100	10,500	5,500	13,500	13,000	35,700	21,600	20,000	32,300	2,170	24,600
5	11,600	10,600	10,700	6,700	13,500	11,600	36,300	21,300	20,600	31,500	2,860	25,200
6	11,700	10,200	11,200	6,500	14,000	11,000	31,100	21,200	23,600	31,100	3,540	25,800
7	11,800	9,880	11,500	7,000	15,000	13,000	29,500	21,400	23,900	28,600	4,120	26,200
8	12,100	9,790	11,000	8,000	15,000	14,000	27,700	21,600	24,100	26,300	4,560	27,000
9	12,800	9,730	10,700	9,000	14,700	14,500	25,800	21,500	25,800	22,600	4,900	27,300
10	13,600	9,400	11,100	10,000	14,200	15,000	24,100	21,300	29,700	19,800	5,360	26,800
11	13,900	9,250	11,600	12,000	14,500	15,200	22,200	21,400	34,500	18,100	5,680	27,800
12	13,800	9,310	11,200	13,500	13,500	15,300	19,600	21,300	34,300	16,800	5,820	26,800
13	14,100	9,280	10,300	13,000	12,500	15,500	17,200	21,800	34,200	16,100	5,930	28,100
14	15,100	9,160	8,410	12,500	12,000	15,500	16,200	22,900	34,000	15,400	6,090	28,100
15	16,000	9,130	7,840	14,000	11,700	15,700	16,400	23,700	34,700	15,400	6,170	28,100
16	16,200	9,010	7,630	16,000	11,500	16,000	16,900	24,000	34,900	15,100	6,280	28,200
17	15,500	8,830	9,250	17,100	11,800	15,700	17,200	22,900	33,800	14,900	6,510	28,500
18	14,200	8,560	11,100	17,500	12,000	15,500	16,900	22,000	36,000	14,800	7,190	28,500
19	12,900	8,590	12,500	17,500	12,200	15,500	16,300	21,600	34,800	14,900	8,230	28,700
20	12,900	8,620	12,600	16,500	12,600	15,500	16,200	21,400	33,400	14,900	9,490	28,600
21	13,500	8,620	11,800	16,000	12,800	15,300	16,500	21,400	33,400	14,700	10,700	28,700
22	14,100	8,500	11,000	15,500	13,200	15,000	17,400	21,200	32,900	15,100	11,900	28,900
23	14,600	8,590	10,500	15,300	13,700	15,300	17,700	21,000	32,400	15,900	12,900	29,100
24	15,100	10,000	11,000	15,500	14,200	16,000	18,500	20,700	32,700	14,800	13,700	29,100
25	15,400	11,300	10,500	16,000	14,500	16,400	20,000	20,800	32,000	14,500	14,800	29,200
26	15,500	11,900	10,500	15,800	14,800	17,500	20,900	20,800	31,100	14,400	16,000	29,400
27	15,100	12,300	10,500	15,500	16,000	18,500	21,500	20,400	31,500	14,500	17,300	29,600
28	15,300	12,400	10,000	15,000	17,000	22,000	22,700	20,600	31,300	13,500	18,600	29,900
29	15,200	11,900	9,000	14,300	---	35,000	22,400	20,600	30,600	12,800	19,800	29,900
30	15,100	11,400	7,000	14,300	---	49,100	21,600	19,800	30,600	12,200	20,000	29,900
31	16,000	---	5,000	14,800	---	28,900	---	19,400	---	11,200	21,700	---
TOTAL	434,500	316,350	319,130	384,100	385,300	544,400	697,000	662,900	887,600	595,200	291,220	827,700
MEAN	14,020	10,540	10,290	12,390	13,760	17,560	23,230	21,380	29,590	19,200	9,394	27,590
MAX	16,200	16,600	12,600	17,500	17,000	49,100	41,600	24,000	36,000	32,300	21,700	29,900
MIN	11,600	8,500	5,000	4,500	11,500	11,000	16,200	19,400	18,600	11,200	1,230	22,500
AC-FT	861,800	627,500	633,000	761,900	764,200	1,080,000	1,382,000	1,315,000	1,761,000	1,181,000	577,600	1,642,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1958 TO SEPTEMBER 1959 DAILY MEAN VALUES												
1	29,900	21,400	10,200	11,300	8,300	15,100	34,000	18,000	22,100	22,600	19,800	20,600
2	30,000	21,500	6,330	8,200	10,100	15,100	33,800	18,100	20,300	22,700	20,000	20,700
3	29,600	21,600	6,220	5,600	10,100	17,200	32,400	18,200	20,400	22,700	20,000	20,500
4	29,300	21,500	6,380	5,800	10,100	17,100	28,600	18,400	20,500	22,700	20,000	20,400
5	28,700	21,400	7,000	5,900	13,300	17,100	28,200	19,800	20,600	22,700	20,200	20,400
6	28,000	21,300	7,500	6,100	14,000	17,000	25,800	22,000	20,800	22,600	20,200	20,400
7	27,500	20,900	7,890	6,300	8,400	16,900	19,200	21,900	20,800	22,700	20,200	20,400
8	27,000	20,600	8,150	6,500	8,500	16,800	18,500	21,700	21,000	25,900	20,200	20,300
9	26,200	20,400	9,680	6,600	14,200	16,700	18,400	21,700	21,100	28,200	20,300	20,300
10	25,500	20,200	11,600	6,600	17,000	16,600	17,400	21,500	21,100	29,000	20,300	20,200
11	25,000	20,100	13,200	6,700	16,900	16,600	18,600	21,400	21,300	28,200	20,400	20,200
12	24,600	19,900	14,000	6,800	16,900	16,600	18,600	21,500	21,400	28,300	20,300	20,000
13	24,100	19,800	13,900	7,000	16,900	16,500	18,800	21,500	21,300	28,200	20,400	20,000
14	23,200	19,700	13,600	7,100	16,800	16,600	18,700	21,500	21,400	27,500	20,400	19,800
15	22,300	19,600	13,300	7,200	16,900	16,500	18,800	21,600	21,500	26,900	20,300	16,200
16	22,100	19,400	13,500	7,300	16,800	16,600	18,900	21,700	21,200	26,300	20,500	20,400
17	21,900	19,100	13,900	7,400	16,700	16,600	18,900	21,700	21,000	25,600	20,500	20,500
18	21,800	18,700	14,100	7,500	16,700	16,600	18,900	21,700	20,900	25,000	20,500	21,000
19	21,700	18,600	14,700	8,600	16,700	16,600	18,900	21,700	21,800	24,400	20,500	21,200
20	21,500	18,400	15,100	8,700	15,700	16,600	18,800	21,400	26,300	23,800	20,500	21,300
21	21,400	18,300	15,400	8,800	14,800	16,800	18,800	21,000	25,600	22,700	20,500	21,500
22	21,300	18,200	15,600	8,900	14,800	16,800	18,600	21,600	25,100	22,000	20,500	21,500
23	21,400	17,800	15,800	9,000	14,800	17,000	18,600	25,300	24,800	21,400	20,600	21,400
24	21,200	16,700	16,000	8,000	14,800	17,000	18,500	25,000	24,600	20,700	20,600	21,200
25	21,300	16,600	16,100	8,100	14,800	17,100	18,400	24,500	24,800	20,800	20,600	21,200
26	21,200	16,000	16,300	9,800	14,800	19,600	18,200	24,400	26,200	20,900	20,500	22,100
27	21,000	15,300	16,300	9,900	14,900	26,800	15,800	24,100	26,000	20,900	20,600	21,900
28	20,900	14,300	16,400	10,000	15,000	32,100	18,000	24,100	25,500	20,800	20,600	21,700
29	20,500	13,200	16,500	10,000	---	34,200	18,000	23,800	25,100	20,800	20,600	21,500
30	20,900	12,000	16,400	10,100	---	33,800	18,100	24,100	24,500	20,600	20,600	21,100
31	21,200	---	13,500	8,300	---	33,700	---	24,100	---	20,500	20,600	---
TOTAL	742,200	562,500	394,550	244,100	399,700	596,300	625,200	679,000	679,000	738,100	631,800	619,900
MEAN	23,940	18,750	12,730	7,874	14,270	19,240	20,840	21,900	22,630	23,810	20,380	20,660
MAX	30,000	21,600	16,500	11,300	17,000	34,200	34,000	25,300	26,300	29,000	20,600	22,100
MIN	20,500	12,000	6,220	5,600	8,300	15,100	15,800	18,000	20,300	20,500	19,800	16,200
AC-FT	1,472,000	1,116,000	782,600	484,200	792,800	1,183,000	1,240,000	1,347,000	1,347,000	1,464,000	1,253,000	1,230,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1959 TO SEPTEMBER 1960 DAILY MEAN VALUES												
1	21,000	14,400	18,200	15,100	6,500	5,800	5,400	4,720	4,800	17,600	29,900	16,300
2	20,900	14,100	18,100	14,900	6,500	5,500	5,400	4,770	4,800	17,500	29,900	19,500
3	20,800	13,800	17,900	14,500	6,500	5,100	5,500	4,720	4,770	17,400	29,900	27,900
4	20,800	13,100	17,600	13,900	6,400	5,200	5,500	4,720	4,830	17,300	29,900	28,100
5	20,700	12,100	17,300	12,900	6,100	5,200	5,400	4,750	4,860	17,300	29,800	28,000
6	20,800	11,700	17,300	11,500	5,300	5,300	5,700	4,690	4,940	18,200	29,900	27,900
7	20,900	8,700	17,300	13,000	5,400	5,300	5,700	4,690	5,600	25,200	29,800	27,900
8	21,000	8,490	14,500	14,000	5,500	5,100	5,700	4,720	12,000	27,700	27,800	28,000
9	20,800	11,100	16,400	12,000	5,900	4,900	5,000	4,660	21,000	27,800	29,400	27,200
10	21,000	13,900	18,300	10,000	5,500	5,000	4,270	4,660	25,800	27,900	23,000	25,400
11	20,900	14,600	18,500	9,700	4,500	4,900	1,630	4,640	19,600	28,100	22,600	25,300
12	20,800	15,200	18,500	10,000	4,800	4,800	1,560	4,660	15,700	27,800	28,600	26,700
13	20,400	15,400	18,500	11,300	5,100	4,700	1,360	4,720	14,900	25,600	28,700	28,900
14	19,900	15,000	18,400	13,500	5,400	4,700	2,140	4,610	11,800	25,700	28,400	18,700
15	19,400	14,100	18,300	14,500	5,600	4,700	1,490	4,640	15,600	26,100	28,600	13,500
16	18,800	12,500	18,100	14,700	5,800	4,700	1,740	4,660	15,500	27,600	29,600	9,490
17	18,300	10,300	17,900	14,700	6,100	4,700	1,700	4,690	15,500	27,700	29,300	8,490
18	17,900	9,060	17,700	14,600	6,400	4,700	1,750	4,770	15,500	27,700	29,200	8,320
19	17,600	7,000	17,600	14,500	5,800	4,800	1,780	4,800	15,500	27,600	29,000	13,000
20	17,300	5,580	17,500	14,600	5,400	4,800	1,750	4,750	15,500	27,400	28,900	25,600
21	17,100	5,540	17,600	14,600	5,300	5,600	1,770	4,750	14,000	27,100	28,700	28,700
22	16,900	6,350	17,300	14,700	5,400	6,500	1,850	4,800	13,500	27,000	28,900	29,000
23	16,700	7,650	17,300	14,800	5,600	5,500	1,850	4,830	16,800	27,100	29,200	29,300
24	16,300	7,790	17,000	14,800	5,800	5,300	1,890	4,750	19,600	26,900	29,200	29,900
25	16,100	8,100	16,700	12,400	5,800	5,200	1,930	4,660	22,500	26,700	27,000	29,700
26	16,000	8,630	16,100	6,300	5,600	5,100	1,870	4,940	22,300	26,800	24,500	29,600
27	15,800	9,890	15,900	5,900	5,300	5,200	1,910	4,860	22,200	27,400	25,900	29,400
28	15,700	13,200	15,600	6,000	5,500	5,300	1,960	8,770	22,100	29,400	25,600	29,600
29	15,600	16,700	15,600	6,200	5,700	5,300	2,790	15,800	21,100	29,400	21,900	29,200
30	15,100	18,500	15,500	6,400	---	5,300	4,690	15,300	17,700	29,800	16,300	29,000
31	14,600	---	15,500	6,600	---	5,400	---	5,390	---	29,900	16,300	---
TOTAL	575,900	342,480	534,000	372,600	164,500	159,600	92,980	172,890	440,300	792,700	845,700	727,600
MEAN	18,580	11,420	17,230	12,020	5,672	5,148	3,099	5,577	14,680	25,570	27,280	24,250
MAX	21,000	18,500	18,500	15,100	6,500	6,500	5,700	15,800	25,800	29,900	29,900	29,900
MIN	14,600	5,540	14,500	5,900	4,500	4,700	1,360	4,610	4,770	17,300	16,300	8,320
AC-FT	1,142,000	679,300	1,059,000	739,100	326,300	316,600	184,400	342,900	873,300	1,572,000	1,677,000	1,443,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961 DAILY MEAN VALUES												
1	29,500	8,840	12,500	12,800	6,000	4,900	15,000	28,200	18,600	26,800	29,800	27,400
2	29,100	8,730	17,500	13,200	6,800	4,770	17,300	30,200	18,800	26,400	29,900	26,500
3	28,700	9,900	18,500	12,700	7,600	4,640	19,500	30,300	19,100	26,200	29,000	26,600
4	28,600	11,300	17,500	9,800	8,200	4,740	19,800	30,600	19,400	26,400	29,800	26,600
5	28,700	11,300	16,500	7,400	8,400	4,800	21,700	30,600	19,600	27,200	29,800	25,600
6	28,800	11,200	15,000	7,600	8,300	4,900	22,500	30,700	19,400	28,600	29,400	24,300
7	28,900	10,800	14,000	7,600	8,200	4,900	25,000	30,800	19,200	28,800	29,200	22,500
8	28,800	11,300	13,500	8,200	8,100	4,880	25,000	30,700	20,600	29,000	29,300	20,600
9	29,400	11,000	13,200	7,800	8,200	4,930	25,000	30,500	22,900	28,900	29,300	18,800
10	28,800	11,000	13,400	7,400	8,000	4,930	24,900	30,400	23,400	28,800	27,300	17,900
11	27,500	10,900	13,500	6,200	7,400	4,930	24,900	30,200	23,300	28,700	25,000	16,800
12	27,200	10,900	13,700	5,400	7,500	4,900	25,900	30,100	23,700	28,700	24,500	16,200
13	27,400	10,800	13,700	5,600	7,300	4,510	29,400	30,300	25,300	29,000	24,500	15,500
14	27,500	10,800	13,700	6,000	7,200	4,850	29,300	30,300	22,000	28,900	24,500	14,900
15	26,200	11,000	13,600	6,000	6,600	4,960	29,300	26,600	13,400	29,200	26,000	14,400
16	26,400	11,100	13,700	6,000	5,600	4,990	29,400	28,300	6,410	28,800	25,300	11,800
17	26,300	8,770	13,700	5,800	5,600	5,100	29,300	27,900	8,580	29,200	26,500	9,510
18	26,000	4,960	13,800	5,500	5,600	5,210	29,400	23,900	5,460	30,200	25,700	9,690
19	24,000	4,510	14,100	5,200	5,700	5,240	29,500	23,200	5,070	30,200	24,400	9,830
20	21,900	4,720	14,300	5,100	5,240	7,390	29,500	22,800	6,940	30,000	24,200	9,900
21	20,200	5,040	14,400	5,100	4,720	11,000	29,300	22,700	11,700	30,200	24,400	9,900
22	18,700	5,000	14,500	5,200	4,770	11,000	29,000	20,900	17,200	30,400	24,700	9,690
23	17,300	5,200	14,600	5,000	4,770	11,000	29,000	17,900	22,800	30,100	25,400	8,380
24	16,100	5,400	14,600	4,900	4,900	13,200	27,600	17,700	22,900	30,200	25,200	8,450
25	15,200	5,600	14,500	4,900	4,960	17,100	22,700	17,500	22,900	30,000	26,000	8,480
26	14,500	5,800	14,500	5,300	4,900	16,900	22,500	16,800	23,400	26,600	27,500	8,480
27	14,000	6,000	14,400	5,600	4,930	16,800	22,400	16,800	24,800	21,600	27,100	8,420
28	13,400	6,200	14,000	5,500	4,930	14,100	23,800	16,600	24,600	19,200	27,000	9,290
29	12,900	6,400	13,800	5,600	---	10,900	26,100	16,900	25,000	15,800	27,200	8,310
30	12,400	7,600	13,300	5,600	---	11,000	26,000	18,200	26,900	15,600	26,800	8,200
31	11,400	---	12,700	5,800	---	11,600	---	18,300	---	18,900	27,000	---
TOTAL	715,800	252,070	444,700	209,800	180,420	245,070	760,000	776,900	563,360	838,600	831,700	452,930
MEAN	23,090	8,402	14,350	6,768	6,444	7,905	25,330	25,060	18,780	27,050	26,830	15,100
MAX	29,500	11,300	18,500	13,200	8,400	17,100	29,500	30,800	26,900	30,400	29,900	27,400
MIN	11,400	4,510	12,500	4,900	4,720	4,510	15,000	16,600	5,070	15,600	24,200	8,200
AC-FT	1,420,000	500,000	882,100	416,100	357,900	486,100	1,507,000	1,541,000	1,117,000	1,663,000	1,650,000	898,400

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1961 TO SEPTEMBER 1962 DAILY MEAN VALUES												
1	8,180	10,600	7,890	14,200	6,490	2,600	2,600	17,200	5,000	3,500	13,300	10,800
2	8,120	9,990	7,920	12,700	6,460	3,200	2,600	17,100	5,000	3,500	13,500	11,000
3	8,050	7,760	7,990	8,700	6,460	3,200	2,800	17,800	5,000	3,100	13,500	10,900
4	7,990	6,550	6,540	8,200	6,430	3,300	2,600	21,600	5,080	3,000	13,500	6,380
5	6,200	7,100	6,360	7,200	5,740	3,300	2,500	24,700	4,880	3,000	13,200	7,210
6	6,200	6,910	6,570	6,000	4,290	3,300	2,700	28,600	4,860	2,500	13,300	8,650
7	6,200	5,920	6,500	5,800	4,130	3,300	2,500	28,900	4,530	2,700	13,400	7,930
8	6,260	5,440	6,900	5,700	4,150	2,500	2,600	28,600	4,270	2,030	13,400	11,200
9	6,340	5,620	6,400	4,400	2,900	2,500	3,000	28,700	4,470	6,200	10,700	8,780
10	6,430	5,360	6,400	2,000	2,990	2,500	2,820	28,800	4,380	7,380	13,300	10,500
11	6,460	5,760	6,400	2,500	2,990	2,500	2,610	28,800	4,190	7,380	13,200	9,880
12	8,280	6,090	6,400	2,700	2,990	2,600	2,650	28,800	4,250	7,320	13,400	12,300
13	8,220	5,520	3,600	2,700	2,970	2,600	5,620	28,700	4,730	5,790	13,400	14,200
14	8,220	5,060	2,800	2,700	2,820	2,600	5,620	28,800	3,640	2,730	12,400	13,800
15	8,150	5,310	4,200	3,000	2,370	2,600	5,650	28,900	4,680	3,000	13,200	12,900
16	9,730	5,570	4,200	3,200	2,310	2,600	5,730	28,900	4,600	3,000	13,500	8,690
17	11,800	5,620	4,200	3,300	2,410	2,600	6,670	28,900	4,600	3,300	13,500	10,700
18	11,100	5,030	3,400	3,500	2,500	2,600	6,760	20,500	4,500	3,000	12,800	7,160
19	11,200	5,160	5,100	4,000	2,500	2,600	6,940	6,700	3,900	2,210	12,300	7,790
20	12,700	5,310	8,400	4,300	2,500	2,600	6,980	6,700	4,500	,824	10,400	8,120
21	14,500	5,440	10,600	4,300	2,500	2,600	7,410	6,700	4,500	5,890	9,370	7,570
22	14,700	5,840	10,800	4,500	2,500	2,600	11,200	6,200	4,400	7,040	13,300	8,720
23	15,400	7,380	10,300	5,000	2,500	2,600	12,600	5,700	4,500	7,470	12,000	6,760
24	16,400	7,570	10,400	4,900	2,500	2,600	13,600	6,500	4,500	7,700	10,200	3,080
25	17,500	7,700	10,500	4,900	2,600	2,600	13,600	6,500	4,200	6,730	5,030	2,930
26	18,700	7,830	11,000	4,900	2,600	2,400	14,600	6,500	3,300	6,260	6,170	3,060
27	19,400	7,990	11,500	5,000	2,600	2,500	17,400	6,400	3,800	7,440	8,810	2,630
28	20,700	8,050	11,700	5,000	2,600	2,500	17,600	6,400	3,500	10,300	6,940	2,750
29	21,400	7,570	12,100	4,930	---	2,600	17,200	5,000	3,500	10,100	5,360	6,140
30	21,100	8,020	14,100	4,700	---	2,600	16,900	4,500	3,500	10,500	7,600	4,500
31	15,300	---	14,200	6,580	---	2,600	---	4,500	---	13,500	14,000	---
TOTAL	360,930	199,070	245,370	161,510	96,800	83,800	224,060	542,600	130,760	168,394	357,980	247,030
MEAN	11,640	6,636	7,915	5,210	3,457	2,703	7,469	17,500	4,359	5,432	11,550	8,234
MAX	21,400	10,600	14,200	14,200	6,490	3,300	17,600	28,900	5,080	13,500	14,000	14,200
MIN	6,200	5,030	2,800	2,000	2,310	2,400	2,500	4,500	3,300	,824	5,030	2,630
AC-FT	715,900	394,900	486,700	320,400	192,000	166,200	444,400	1,076,000	259,400	334,000	710,100	490,000

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1962 TO SEPTEMBER 1963 DAILY MEAN VALUES												
1	9,340	12,800	10,700	13,900	14,000	9,490	20,000	28,800	35,500	28,800	30,600	11,200
2	16,800	13,100	9,330	13,100	15,000	10,500	20,900	29,500	37,100	26,300	28,500	11,700
3	13,300	12,000	14,400	13,000	11,500	8,380	22,500	29,100	36,700	29,400	25,400	15,300
4	13,300	11,900	15,100	15,000	11,000	12,000	22,600	28,900	36,700	34,300	24,300	17,700
5	14,700	14,500	18,300	14,000	10,000	10,300	20,100	28,600	36,300	33,700	30,400	18,600
6	14,100	12,700	20,700	11,400	11,000	10,800	16,000	28,600	36,000	31,600	33,600	20,500
7	8,830	8,680	20,100	9,580	14,500	9,280	14,100	28,600	35,300	33,500	36,900	19,800
8	12,100	8,560	20,000	7,780	14,500	9,220	15,800	28,900	28,900	33,700	37,400	13,700
9	15,100	11,900	16,100	13,000	15,500	10,300	22,500	29,200	22,300	33,600	34,500	23,500
10	15,100	10,400	20,300	17,700	13,500	7,060	20,000	29,300	21,500	34,000	27,400	27,900
11	14,700	9,970	18,700	19,900	17,900	10,200	21,700	29,200	22,800	33,600	25,700	28,500
12	14,900	11,800	17,400	20,900	15,000	13,300	25,900	29,400	24,700	32,800	27,100	28,700
13	15,000	12,700	16,500	14,700	16,300	10,100	25,800	28,700	26,500	32,800	25,000	25,100
14	8,410	11,800	16,400	14,400	18,400	8,740	23,100	28,400	30,700	30,800	20,600	17,100
15	13,100	15,300	15,000	10,400	16,800	7,900	25,600	28,200	26,800	27,600	19,300	7,710
16	15,200	14,400	11,600	9,340	12,600	10,600	25,600	28,100	25,100	28,500	21,800	14,400
17	15,500	18,500	10,600	8,440	6,500	9,550	22,300	28,500	20,500	19,100	24,100	16,000
18	14,900	12,600	11,200	11,100	12,600	16,300	12,200	28,200	16,900	10,300	21,500	18,000
19	14,600	10,400	16,100	14,200	11,600	14,400	10,500	25,500	17,000	8,130	23,800	19,300
20	14,700	5,570	17,300	14,200	15,500	13,800	1,380	28,000	21,800	8,910	20,100	16,800
21	8,950	6,690	18,100	15,400	19,400	16,100	,589	29,300	25,100	11,300	19,400	12,400
22	13,100	5,920	14,000	14,300	15,900	16,700	16,900	29,700	23,300	11,200	22,000	6,870
23	13,900	4,880	18,100	20,000	13,300	8,140	23,400	30,600	22,000	10,400	21,600	15,000
24	13,200	9,700	14,500	15,500	10,100	5,340	3,010	31,000	25,200	17,100	19,100	15,700
25	14,100	7,840	15,500	13,500	13,900	10,700	4,060	22,800	27,100	32,400	16,800	15,300
26	13,800	13,300	15,100	16,500	14,300	7,580	8,570	29,100	22,400	30,800	19,200	14,800
27	12,600	15,900	13,800	16,000	11,900	8,380	20,800	34,500	19,200	30,700	19,600	15,600
28	11,500	16,000	11,800	18,000	10,700	9,790	26,800	33,700	23,300	30,000	21,400	14,600
29	13,800	17,400	11,200	17,000	---	11,600	25,400	35,300	21,300	31,400	20,800	8,220
30	12,400	15,700	11,700	18,000	---	15,800	29,400	29,400	19,500	30,900	15,000	10,100
31	14,100	---	13,900	16,000	---	13,500	---	33,200	---	32,200	14,900	---
TOTAL	415,130	352,910	473,530	446,240	383,200	335,850	547,509	910,300	787,500	819,840	747,800	500,100
MEAN	13,390	11,760	15,280	14,390	13,690	10,830	18,250	29,360	26,250	26,450	24,120	16,670
MAX	16,800	18,500	20,700	20,900	19,400	16,700	29,400	35,300	37,100	34,300	37,400	28,700
MIN	8,410	4,880	9,330	7,780	6,500	5,340	,589	22,800	16,900	8,130	14,900	6,870
AC-FT	823,400	700,000	939,200	885,100	760,100	666,200	1,086,000	1,806,000	1,562,000	1,626,000	1,483,000	991,900

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964 DAILY MEAN VALUES												
1	10,600	16,700	16,500	18,400	16,300	9,290	20,000	21,400	20,400	22,500	35,000	38,300
2	24,300	17,400	21,100	19,700	12,100	16,800	19,900	20,900	21,500	25,000	29,100	42,000
3	11,800	10,400	19,400	23,000	16,600	23,400	22,800	17,000	19,400	27,900	35,600	41,500
4	10,000	16,400	17,600	20,600	17,800	22,900	33,200	8,650	18,400	18,800	37,000	22,500
5	9,560	18,500	17,000	17,600	17,400	23,900	30,300	6,950	29,400	18,000	37,900	15,600
6	6,760	17,800	16,700	22,700	18,500	28,800	31,700	6,310	27,100	26,600	33,000	12,600
7	15,100	19,300	16,300	21,600	18,400	30,200	27,600	7,420	33,000	28,900	28,200	16,500
	17,000	19,800	15,900	23,100	18,300	21,400	21,400	8,950	33,200	28,800	24,200	24,500
	17,800	14,300	21,200	27,700	14,100	24,000	20,200	6,820	36,200	29,900	18,700	23,700
	16,100	10,200	23,200	30,300	19,200	22,100	16,400	3,000	33,900	25,600	28,400	20,000
11	16,400	14,200	23,400	30,800	21,800	21,400	14,400	5,000	30,100	19,800	27,700	14,400
12	14,900	17,200	25,400	27,600	19,600	21,200	7,320	6,500	31,200	19,100	26,800	10,000
13	6,220	16,300	26,400	30,100	16,600	20,700	16,100	8,000	23,500	24,400	29,100	6,000
14	14,400	16,300	26,100	27,400	16,400	20,600	23,400	10,400	27,400	25,600	32,000	8,000
15	17,200	14,900	24,900	23,100	18,300	14,200	21,400	13,100	24,700	28,000	29,800	10,000
16	18,700	13,700	27,300	21,500	15,400	20,900	16,300	17,300	26,000	32,600	24,700	8,000
17	18,700	7,740	27,300	20,200	17,600	23,200	16,300	18,600	24,500	34,800	29,700	6,500
18	22,400	13,300	25,800	19,900	17,300	25,500	19,500	18,700	28,100	34,200	33,800	7,000
19	25,000	11,300	26,800	17,500	18,500	25,000	3,000	17,700	32,000	29,900	35,400	8,500
20	17,800	14,000	29,600	18,400	18,600	26,200	16,000	20,000	15,600	35,200	34,800	4,000
21	23,500	13,700	28,000	17,200	19,200	3,610	23,000	23,200	6,000	37,600	31,500	6,000
22	23,000	14,800	21,000	17,400	19,100	1,400	21,200	24,500	10,000	37,500	31,100	8,000
23	21,500	11,400	28,500	20,900	18,900	13,000	21,600	21,600	13,600	36,800	23,400	9,500
24	20,200	13,100	19,900	21,500	19,900	25,200	20,400	18,100	12,900	35,400	30,900	9,500
25	21,400	14,000	13,900	19,600	21,200	26,400	19,400	22,800	14,200	24,800	34,200	7,500
26	16,400	15,200	18,000	17,100	20,900	26,700	17,300	21,600	17,900	19,800	34,000	5,000
27	3,610	16,100	22,400	19,800	20,400	20,800	21,000	22,300	13,100	30,500	34,400	2,500
28	18,000	15,200	23,400	22,200	17,600	21,400	19,000	24,400	9,150	30,500	32,200	5,000
29	22,500	17,900	22,500	17,800	14,600	17,800	17,700	20,400	16,100	22,400	28,500	7,000
30	21,300	18,500	26,700	17,300	---	20,100	16,700	15,300	17,800	20,900	20,700	11,500
31	19,200	---	25,900	17,300	---	20,000	---	10,800	---	29,400	31,300	---
TOTAL	521,350	449,640	698,100	669,300	520,600	638,100	594,520	467,700	666,350	861,200	943,100	411,100
MEAN	16,820	14,990	22,520	21,590	17,950	20,580	19,820	15,090	22,210	27,780	30,420	13,700
MAX	25,000	19,800	29,600	30,800	21,800	30,200	33,200	24,500	36,200	37,600	37,900	42,000
MIN	3,610	7,740	13,900	17,100	12,100	1,400	3,000	3,000	6,000	18,000	18,700	2,500
AC-FT	1,034,000	891,900	1,385,000	1,328,000	1,033,000	1,266,000	1,179,000	927,700	1,322,000	1,708,000	1,871,000	815,400

Table 15. Daily discharge for the Missouri River at Pierre (station 06440000) for water years 1934-65—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965 DAILY MEAN VALUES												
1	14,300	11,300	27,900	14,900	19,900	17,200	14,200	25,200	16,000	13,500	24,200	23,700
2	13,000	12,100	29,600	16,400	21,500	17,800	18,600	18,000	17,300	20,500	24,300	23,800
3	7,380	11,900	31,200	16,000	21,800	18,400	22,600	21,600	19,100	20,000	26,300	26,400
4	6,760	12,300	28,700	16,800	19,800	17,300	17,100	22,400	23,300	16,300	24,500	27,300
5	11,100	14,500	26,500	16,100	16,200	15,600	22,800	23,200	22,100	16,700	24,800	21,100
6	11,600	13,600	22,200	18,200	14,500	15,700	20,000	22,500	16,800	18,600	25,200	22,400
7	14,600	12,000	23,200	16,900	12,700	11,800	16,000	23,000	18,200	20,000	22,700	29,000
8	12,500	6,950	20,300	19,700	16,800	16,200	12,900	21,800	15,600	17,500	21,600	32,000
9	12,900	17,100	18,300	21,800	14,700	16,300	18,300	15,400	15,200	16,500	26,600	33,000
10	8,920	22,700	19,300	18,200	16,600	16,300	13,900	19,600	14,800	14,500	30,800	30,100
11	5,000	19,700	18,700	20,800	18,500	15,100	8,490	21,900	16,900	16,900	33,400	30,100
12	8,880	20,200	15,400	18,300	17,100	15,100	10,300	23,800	17,500	19,800	37,400	23,900
13	9,000	26,100	16,400	20,600	17,100	13,300	13,500	24,500	12,900	21,200	39,000	27,300
14	14,000	20,700	23,200	20,200	11,400	9,220	14,000	22,900	21,000	19,500	33,200	30,100
15	18,000	14,600	22,900	19,100	15,600	14,300	16,400	18,900	21,600	23,000	24,900	26,900
16	21,000	25,000	22,400	19,700	14,900	15,300	15,300	11,500	19,500	25,700	30,400	28,600
17	20,000	33,900	26,600	14,400	13,400	18,000	13,900	23,200	20,100	26,300	32,100	26,200
18	15,000	25,800	23,900	17,400	15,700	19,100	10,500	20,200	19,300	25,600	28,800	27,600
19	19,400	26,700	18,200	16,500	14,500	18,600	12,600	18,300	17,300	26,300	29,800	24,500
20	15,500	28,800	17,500	16,600	12,200	18,300	11,300	20,300	12,400	25,800	27,600	26,600
21	10,500	21,600	20,000	14,900	14,100	13,100	12,400	16,900	19,600	29,100	24,700	27,300
22	11,300	9,150	18,800	16,600	22,500	16,400	15,000	18,200	27,300	31,100	20,100	25,800
23	11,600	12,800	22,000	18,000	22,500	16,000	16,500	15,000	26,100	28,900	27,400	25,500
24	9,120	16,100	20,900	11,400	21,000	15,200	18,100	19,700	25,600	26,800	29,400	22,800
25	8,090	9,730	16,800	17,500	16,600	13,900	14,400	18,500	25,900	24,900	31,200	22,800
26	10,000	13,200	19,600	17,600	15,700	13,200	18,400	20,700	17,600	27,400	31,300	22,400
27	11,100	18,900	19,800	19,200	12,200	11,500	18,200	19,800	10,600	29,500	29,500	26,500
28	16,800	28,500	21,400	23,600	8,980	9,530	19,900	17,900	10,800	28,600	28,400	25,600
29	17,500	29,800	20,800	22,300	---	12,900	20,000	14,700	7,900	29,700	22,100	27,400
30	16,400	32,300	19,200	18,200	---	13,000	23,200	11,300	6,890	28,700	26,300	15,900
31	16,500	---	18,600	15,100	---	11,100	---	9,700	---	24,700	25,400	---
TOTAL	397,750	568,030	670,300	553,000	458,480	464,750	478,790	600,600	535,190	713,600	863,400	782,600
MEAN	12,830	18,930	21,620	17,840	16,370	14,990	15,960	19,370	17,840	23,020	27,850	26,090
MAX	21,000	33,900	31,200	23,600	22,500	19,100	23,200	25,200	27,300	31,100	39,000	33,000
MIN	5,000	6,950	15,400	11,400	8,980	9,220	8,490	9,700	6,890	13,500	20,100	15,900
AC-FT	788,900	1,127,000	1,330,000	1,097,000	909,400	921,800	949,700	1,191,000	1,062,000	1,415,000	1,713,000	1,552,000

Table 16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1927 TO SEPTEMBER 1928 DAILY MEAN VALUES												
1	---	---	---	---	---	---	---	---	---	---	---	20,300
2	---	---	---	---	---	---	---	---	---	---	---	20,100
3	---	---	---	---	---	---	---	---	---	---	---	17,600
4	---	---	---	---	---	---	---	---	---	---	---	18,800
5	---	---	---	---	---	---	---	---	---	---	---	18,500
6	---	---	---	---	---	---	---	---	---	---	---	18,900
7	---	---	---	---	---	---	---	---	---	---	---	18,600
8	---	---	---	---	---	---	---	---	---	---	---	18,100
9	---	---	---	---	---	---	---	---	---	---	---	18,200
10	---	---	---	---	---	---	---	---	---	---	---	18,900
11	---	---	---	---	---	---	---	---	---	---	---	19,900
12	---	---	---	---	---	---	---	---	---	---	---	20,200
13	---	---	---	---	---	---	---	---	---	---	---	20,600
14	---	---	---	---	---	---	---	---	---	---	---	21,000
15	---	---	---	---	---	---	---	---	---	---	---	20,400
16	---	---	---	---	---	---	---	---	---	---	---	20,300
17	---	---	---	---	---	---	---	---	---	---	---	20,000
18	---	---	---	---	---	---	---	---	---	---	---	21,400
19	---	---	---	---	---	---	---	---	---	---	---	27,600
20	---	---	---	---	---	---	---	---	---	---	---	36,700
21	---	---	---	---	---	---	---	---	---	---	---	31,400
22	---	---	---	---	---	---	---	---	---	---	---	24,300
23	---	---	---	---	---	---	---	---	---	---	---	19,700
24	---	---	---	---	---	---	---	---	---	---	---	18,600
25	---	---	---	---	---	---	---	---	---	---	---	17,800
26	---	---	---	---	---	---	---	---	---	---	---	17,200
27	---	---	---	---	---	---	---	---	---	---	---	16,600
28	---	---	---	---	---	---	---	---	---	---	---	16,100
29	---	---	---	---	---	---	---	---	---	---	---	16,200
30	---	---	---	---	---	---	---	---	---	---	---	16,200
31	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	610,200
MEAN	---	---	---	---	---	---	---	---	---	---	---	20,340
MAX	---	---	---	---	---	---	---	---	---	---	---	36,700
MIN	---	---	---	---	---	---	---	---	---	---	---	16,100
AC-FT	---	---	---	---	---	---	---	---	---	---	---	1,210,000

Table 16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1928 TO SEPTEMBER 1929 DAILY MEAN VALUES												
1	15,800	15,600	15,100	12,000	8,600	16,000	77,000	25,100	113,000	65,300	27,700	12,300
2	15,800	16,500	14,700	12,000	8,600	16,000	69,100	24,700	118,000	63,100	27,400	11,900
3	15,800	16,800	13,600	12,000	8,600	16,000	75,400	25,800	140,000	61,200	26,000	12,300
4	15,600	16,800	10,400	12,000	8,600	16,000	68,000	27,300	146,000	60,100	23,800	11,900
5	15,300	17,400	12,300	12,000	8,600	16,000	61,600	29,200	138,000	59,000	22,600	11,900
6	15,300	17,400	10,800	12,000	8,600	18,000	66,800	31,500	117,000	62,300	21,900	11,900
7	15,300	17,400	8,620	12,000	8,600	18,000	66,600	33,000	96,600	68,200	20,600	12,300
8	15,300	17,400	9,160	12,000	8,600	18,000	57,300	34,600	89,000	68,400	20,000	12,300
9	15,300	17,400	8,490	12,000	8,600	18,000	52,800	36,400	93,000	70,000	19,100	12,700
10	15,000	17,100	7,820	12,000	8,600	18,000	53,800	38,400	100,000	68,400	18,600	12,300
11	15,000	16,800	7,680	11,500	9,800	35,000	56,500	39,200	122,000	62,400	18,100	12,300
12	14,800	16,800	7,820	11,500	9,800	35,000	53,200	39,300	147,000	55,600	18,000	12,300
13	15,300	16,800	9,570	11,500	9,800	35,000	52,400	40,700	131,000	54,000	17,900	12,300
14	15,300	17,100	9,710	11,500	9,800	35,000	52,200	41,200	97,000	54,000	17,500	11,800
15	15,800	16,200	9,850	11,500	9,800	35,000	50,600	40,300	85,600	51,400	17,300	11,400
16	15,800	16,200	9,710	11,500	9,800	35,000	44,800	38,800	100,000	44,400	16,600	11,300
17	15,800	16,800	9,160	11,500	9,800	52,800	39,600	38,900	106,000	39,900	16,100	11,200
18	15,800	16,500	8,490	11,500	9,800	39,600	37,900	39,200	98,600	37,900	15,600	11,000
19	14,800	17,100	8,360	11,500	9,800	31,600	35,500	42,600	96,000	37,900	15,500	11,000
20	14,800	16,800	8,080	11,500	9,800	27,500	32,400	42,400	88,200	36,700	15,200	11,000
21	14,800	16,800	9,160	9,300	11,800	46,600	29,000	39,600	97,800	36,100	14,600	11,400
22	14,800	16,800	9,300	9,300	11,800	61,200	28,200	37,200	94,200	32,400	14,400	11,400
23	14,800	16,800	9,440	9,300	11,800	84,000	26,800	33,200	103,000	31,900	14,200	12,000
24	14,800	16,600	9,570	9,300	11,800	82,100	26,800	31,200	105,000	31,600	13,900	12,500
25	14,600	16,200	9,030	9,300	11,800	77,400	33,300	30,900	97,200	29,800	13,300	13,100
26	15,000	16,200	8,760	9,300	11,800	63,800	32,000	28,400	81,900	31,200	13,400	13,700
27	15,100	15,600	9,160	9,300	11,800	54,600	27,800	30,400	76,000	32,200	13,500	14,300
28	15,200	15,100	9,300	9,300	11,800	55,400	32,800	36,600	71,600	32,100	13,500	14,300
29	15,200	15,000	10,800	9,300	---	80,200	29,300	50,300	72,500	31,400	13,300	14,300
30	15,400	15,200	10,900	9,300	---	120,000	27,300	84,000	68,900	31,900	12,300	14,300
31	15,600	---	10,800	9,300	---	103,000	---	91,600	---	30,700	12,300	---
TOTAL	473,000	497,200	305,640	337,300	278,400	1,359,800	1,396,800	1,202,000	3,090,100	1,471,500	544,200	368,700
MEAN	15,260	16,570	9,859	10,880	9,943	43,860	46,560	38,770	103,000	47,470	17,550	12,290
MAX	15,800	17,400	15,100	12,000	11,800	120,000	77,000	91,600	147,000	70,000	27,700	14,300
MIN	14,600	15,000	7,680	9,300	8,600	16,000	26,800	24,700	68,900	29,800	12,300	11,000
AC-FT	938,200	986,200	606,200	669,000	552,200	2,697,000	2,771,000	2,384,000	6,129,000	2,919,000	1,079,000	731,300

Table 16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1944 TO SEPTEMBER 1945 DAILY MEAN VALUES												
1	---	---	---	---	---	---	41,100	11,600	20,500	67,600	33,800	19,000
2	---	---	---	---	---	---	35,900	11,300	20,000	78,600	32,600	18,700
3	---	---	---	---	---	---	34,200	11,300	20,000	77,400	31,500	18,700
4	---	---	---	---	---	---	31,800	11,100	20,500	72,900	29,200	19,200
5	---	---	---	---	---	---	28,800	11,100	20,800	72,900	28,200	19,700
6	---	---	---	---	---	---	27,600	11,100	21,900	62,500	26,700	20,200
7	---	---	---	---	---	---	25,500	10,900	23,700	51,400	25,800	20,000
8	---	---	---	---	---	---	23,100	11,100	27,300	43,100	25,500	19,400
9	---	---	---	---	---	---	21,600	11,600	50,600	39,400	24,600	19,400
10	---	---	---	---	---	---	20,200	12,000	43,800	37,300	23,100	19,700
11	---	---	---	---	---	---	20,800	13,000	49,000	36,400	21,400	19,700
12	---	---	---	---	---	---	20,000	13,000	59,600	35,000	19,700	21,100
13	---	---	---	---	---	---	18,700	12,800	62,500	33,800	19,200	22,800
14	---	---	---	---	---	---	18,000	12,600	61,500	34,200	19,400	23,700
15	---	---	---	---	---	---	17,600	12,500	63,500	36,400	19,700	23,400
16	---	---	---	---	---	---	17,100	12,100	59,600	38,800	20,800	23,400
17	---	---	---	---	---	---	16,900	11,600	53,100	37,800	21,900	23,400
18	---	---	---	---	---	---	15,800	11,100	46,000	36,800	24,000	24,600
19	---	---	---	---	---	---	15,000	10,900	42,400	35,900	22,500	26,400
20	---	---	---	---	---	---	14,600	10,900	42,400	36,400	22,200	27,900
21	---	---	---	---	---	---	14,100	10,900	41,100	37,300	21,600	27,000
22	---	---	---	---	---	---	14,100	11,100	40,500	36,400	20,800	27,000
23	---	---	---	---	---	---	13,700	12,000	41,800	36,400	20,500	27,000
24	---	---	---	---	---	---	13,400	12,600	41,800	37,300	20,500	27,300
25	---	---	---	---	---	---	13,000	14,100	38,300	39,900	20,000	27,600
26	---	---	---	---	---	---	12,800	15,600	35,400	42,400	19,700	28,200
27	---	---	---	---	---	---	12,500	17,600	33,400	41,800	19,700	29,800
28	---	---	---	---	---	---	12,100	19,700	31,500	39,900	19,700	30,400
29	---	---	---	---	---	---	12,100	20,500	29,800	38,300	19,200	30,800
30	---	---	---	---	---	---	11,800	20,500	31,200	36,800	19,200	29,800
31	---	---	---	---	---	---	---	20,500	---	35,900	19,200	---
TOTAL	---	---	---	---	---	---	593,900	408,700	1,173,500	1,387,000	711,900	715,300
MEAN	---	---	---	---	---	---	19,800	13,180	39,120	44,740	22,960	23,840
MAX	---	---	---	---	---	---	41,100	20,500	63,500	78,600	33,800	30,800
MIN	---	---	---	---	---	---	11,800	10,900	20,000	33,800	19,200	18,700
AC-FT	---	---	---	---	---	---	1,178,000	810,700	2,328,000	2,751,000	1,412,000	1,419,000

Table 16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1945 TO SEPTEMBER 1946 DAILY MEAN VALUES												
1	28,500	29,500	12,000	6,500	9,300	10,800	31,100	10,800	24,100	47,200	23,200	24,700
2	27,000	28,500	10,600	6,100	9,000	10,800	22,600	12,300	25,300	45,400	22,000	24,400
3	26,700	27,300	10,400	6,100	8,700	10,600	18,500	13,700	33,500	45,400	20,900	23,800
4	27,000	26,100	9,300	6,000	8,100	10,600	17,200	14,900	35,000	47,900	20,200	23,800
5	27,300	24,300	9,000	6,000	8,000	10,600	16,700	24,700	30,200	50,800	19,200	23,800
6	27,600	22,800	8,100	5,900	8,700	10,600	16,700	27,600	29,500	46,600	18,300	23,800
7	27,600	21,600	7,700	6,000	8,200	10,600	17,200	21,400	36,100	41,000	17,400	24,100
8	27,300	21,100	7,500	5,600	8,200	11,100	17,400	20,400	37,700	38,100	16,700	24,700
9	27,000	20,000	7,100	5,500	8,100	11,300	17,400	20,200	36,500	36,900	15,900	25,000
10	26,700	19,000	5,600	5,600	7,700	12,000	16,700	19,900	34,200	36,900	15,300	25,000
11	26,400	18,500	5,200	5,600	7,500	13,900	16,500	19,400	30,800	35,700	14,900	24,400
12	26,100	18,700	5,400	6,000	7,500	15,200	15,900	19,200	28,500	35,000	14,300	24,400
13	26,400	17,600	5,600	6,300	7,200	18,000	15,500	20,400	26,900	34,200	13,900	25,300
14	26,700	15,800	5,800	6,500	7,200	33,000	15,300	21,700	27,200	33,800	13,500	26,200
15	27,000	14,100	6,000	7,100	7,200	30,800	15,100	21,400	28,200	34,600	13,500	27,200
16	27,000	13,400	6,800	7,500	7,100	31,500	15,100	20,600	43,800	36,500	13,900	27,600
17	26,400	12,800	8,400	8,100	6,800	26,400	15,100	19,900	53,100	38,100	15,500	27,600
18	26,400	12,500	8,600	8,700	7,000	22,500	14,700	19,000	49,800	39,500	19,200	35,300
19	25,500	12,300	7,700	9,600	6,700	20,800	14,700	18,300	65,500	41,500	23,200	40,500
20	25,200	12,100	8,000	10,100	7,400	21,600	14,300	18,300	69,600	43,600	24,400	36,900
21	25,800	11,400	8,600	10,600	8,200	24,300	14,300	18,500	77,400	40,000	23,800	31,800
22	25,800	10,800	8,400	11,100	9,200	30,800	13,900	19,000	63,500	34,200	22,900	29,200
23	26,400	12,000	8,100	10,900	10,400	33,000	13,700	19,400	54,000	31,400	23,200	28,200
24	26,700	11,300	7,800	11,100	10,400	29,500	13,500	19,400	49,800	29,800	23,500	27,600
25	27,600	12,000	7,500	10,600	10,600	25,800	12,600	19,900	52,200	29,200	23,800	26,900
26	27,300	12,100	7,400	10,400	10,800	24,300	12,100	28,200	58,600	30,800	24,700	26,900
27	27,600	12,100	7,200	10,300	10,900	25,500	11,600	35,000	59,600	32,800	25,300	27,900
28	28,200	12,100	7,200	10,100	10,600	25,200	11,100	26,900	54,000	32,800	24,700	28,500
29	28,800	12,500	7,000	9,600	---	24,000	10,700	23,800	53,100	29,800	25,000	28,500
30	29,800	14,100	6,800	9,600	---	32,200	10,300	23,500	49,000	27,200	25,300	27,900
31	29,200	---	6,700	9,300	---	42,400	---	23,200	---	24,700	25,300	---
TOTAL	839,000	508,400	237,500	248,400	236,700	659,700	467,500	640,900	1,316,700	1,151,400	622,900	821,900
MEAN	27,060	16,950	7,661	8,013	8,454	21,280	15,580	20,670	43,890	37,140	20,090	27,400
MAX	29,800	29,500	12,000	11,100	10,900	42,400	31,100	35,000	77,400	50,800	25,300	40,500
MIN	25,200	10,800	5,200	5,500	6,700	10,600	10,300	10,800	24,100	24,700	13,500	23,800
AC-FT	1,664,000	1,008,000	471,100	492,700	469,500	1,309,000	927,300	1,271,000	2,612,000	2,284,000	1,236,000	1,630,000

Table 16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1946 TO SEPTEMBER 1947 DAILY MEAN VALUES												
1	26,600	21,400	4,240	6,100	9,700	13,700	175,000	35,200	36,300	86,800	37,900	29,800
2	26,200	20,800	4,490	6,100	9,900	14,400	194,000	33,200	36,300	83,600	38,400	28,900
3	25,800	20,500	3,990	6,300	9,900	15,000	122,000	34,200	35,200	84,600	39,000	29,300
4	24,500	20,200	3,990	6,800	9,900	15,300	79,600	34,200	35,200	78,600	40,200	29,300
5	24,100	20,200	4,620	7,500	10,100	15,300	67,000	34,700	33,200	72,600	39,000	29,800
6	24,900	20,500	5,260	8,000	9,700	15,800	64,100	35,200	35,800	71,700	37,400	29,300
7	24,500	21,100	5,790	8,700	9,700	16,200	64,100	34,200	49,400	68,800	35,800	28,900
8	26,600	21,100	6,480	9,100	9,700	17,500	64,100	33,200	51,000	60,500	36,300	28,400
9	25,800	20,200	6,480	9,600	9,900	18,000	53,500	32,200	41,500	53,500	35,800	28,400
10	25,800	19,100	6,500	10,200	9,700	18,200	50,200	30,800	42,800	48,600	35,800	28,900
11	28,900	18,000	6,600	10,800	9,700	18,500	44,900	30,800	51,000	46,400	37,400	30,300
12	29,300	17,200	6,600	11,000	10,100	18,000	40,200	30,800	69,800	45,600	38,400	31,700
13	43,500	16,700	6,500	11,100	11,000	17,700	39,600	31,700	63,200	47,100	40,200	31,200
14	43,500	15,800	6,500	11,100	11,300	17,000	45,600	51,800	49,400	50,200	43,500	31,700
15	36,800	15,500	6,300	11,000	11,900	15,800	56,900	51,800	45,600	54,400	44,200	29,300
16	32,700	15,000	6,500	10,400	12,500	14,400	56,000	52,600	44,900	56,000	41,500	29,300
17	29,800	14,200	8,000	9,900	12,700	12,700	56,900	60,500	45,600	53,500	40,200	29,800
18	29,300	14,200	7,600	9,400	13,100	11,900	55,200	66,000	54,400	51,000	39,600	30,300
19	28,400	13,900	7,800	9,400	13,100	11,700	56,000	63,200	56,000	50,200	38,400	30,800
20	26,600	13,300	8,100	9,200	12,900	11,700	53,500	58,700	46,400	51,000	37,400	31,700
21	24,100	12,700	8,700	8,900	12,900	11,900	47,100	51,000	43,500	51,000	38,400	31,200
22	23,000	11,100	11,000	8,700	13,300	12,100	43,500	47,100	47,100	48,600	40,200	31,200
23	23,400	9,900	13,300	8,700	13,900	12,100	42,200	42,800	70,800	46,400	40,200	32,700
24	24,100	8,260	13,500	8,700	14,400	13,100	39,000	42,200	137,000	44,200	39,000	33,700
25	24,100	6,480	13,100	9,200	14,800	14,400	37,400	40,200	163,000	42,200	37,400	34,700
26	23,800	5,520	12,700	9,600	15,300	14,800	37,900	40,200	152,000	39,000	35,800	34,200
27	23,400	5,000	12,100	9,900	16,000	16,000	36,800	42,800	133,000	37,900	34,200	34,200
28	23,400	4,740	11,300	10,100	14,400	33,700	35,800	43,500	122,000	37,900	32,200	34,200
29	23,000	4,490	9,700	9,900	---	79,600	34,200	40,800	112,000	37,400	31,700	33,200
30	22,300	4,360	7,600	9,900	---	44,200	34,200	38,400	99,600	36,800	30,800	33,700
31	21,700	---	6,500	9,900	---	74,600	---	36,300	---	37,400	30,300	---
TOTAL	839,900	431,450	241,840	285,200	331,500	635,300	1,826,500	1,300,300	2,003,000	1,673,500	1,166,600	930,100
MEAN	27,090	14,380	7,801	9,200	11,840	20,490	60,880	41,950	66,770	53,980	37,630	31,000
MAX	43,500	21,400	13,500	11,100	16,000	79,600	194,000	66,000	163,000	86,800	44,200	34,700
MIN	21,700	4,360	3,990	6,100	9,700	11,700	34,200	30,800	33,200	36,800	30,300	28,400
AC-FT	1,666,000	855,800	479,700	565,700	657,500	1,260,000	3,623,000	2,579,000	3,973,000	3,319,000	2,314,000	1,845,000

Table 16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1947 TO SEPTEMBER 1948 DAILY MEAN VALUES												
1	33,700	38,400	12,100	10,800	9,900	10,800	59,600	35,200	51,000	64,100	39,600	30,800
2	34,200	38,400	11,500	11,000	9,100	11,000	57,800	31,700	42,800	67,900	38,400	29,800
3	34,200	37,400	11,500	11,300	9,100	11,700	59,600	29,300	41,500	67,900	37,900	28,900
4	33,700	37,900	10,600	11,900	9,100	12,300	61,400	27,500	45,600	64,100	37,400	28,900
5	33,700	36,300	10,200	13,300	8,900	12,300	84,600	28,900	51,800	58,700	35,200	30,300
6	34,700	36,300	10,600	13,300	9,200	12,900	88,800	33,200	56,000	53,500	35,800	32,200
7	36,800	36,800	10,200	13,100	9,200	13,500	74,600	37,900	65,000	51,000	36,800	31,700
8	37,400	37,900	9,600	12,500	9,200	14,400	56,900	35,800	67,000	51,000	34,200	31,700
9	35,200	35,800	9,200	12,500	9,200	14,600	65,000	33,200	67,000	52,600	40,800	30,800
10	33,700	33,700	10,100	12,500	9,400	15,800	67,000	31,700	72,600	53,500	44,200	30,300
11	32,700	31,700	13,300	12,500	9,900	16,700	47,800	33,700	72,600	56,000	37,400	29,300
12	32,700	28,000	15,300	12,500	10,100	18,000	38,400	33,700	76,600	56,900	37,900	28,900
13	32,700	24,500	15,300	12,500	10,400	18,000	35,800	30,800	75,600	56,900	37,400	28,400
14	34,700	23,400	17,000	12,100	10,200	19,300	33,700	29,800	76,600	53,500	37,400	28,400
15	36,300	22,300	16,700	11,700	10,200	20,800	33,200	31,200	74,600	48,600	40,800	28,900
16	36,800	20,500	15,300	11,000	9,900	22,000	31,700	30,800	70,800	47,100	42,800	28,900
17	36,800	19,100	13,900	11,500	9,400	25,300	30,300	29,300	71,700	52,600	42,200	28,400
18	35,200	18,800	12,700	11,300	9,200	27,500	29,800	27,000	76,600	64,100	39,600	27,500
19	34,700	16,200	12,300	11,100	8,900	30,300	36,300	27,000	79,600	67,900	37,900	27,000
20	35,200	16,500	12,500	11,000	9,100	32,200	39,000	27,000	74,600	58,700	37,400	27,000
21	35,200	17,200	12,700	10,400	9,100	35,200	39,600	26,600	71,700	57,800	36,300	28,000
22	34,700	15,000	12,300	10,200	9,100	39,600	51,000	26,200	70,800	56,900	35,800	28,400
23	34,700	12,100	11,700	9,900	8,900	46,400	70,800	24,900	70,800	54,400	36,300	28,900
24	36,300	11,500	10,400	10,100	9,200	69,800	61,400	23,800	76,600	52,600	35,800	28,900
25	35,800	12,100	9,700	10,100	9,400	86,800	43,500	23,000	82,600	56,000	35,200	28,900
26	35,200	12,500	9,400	10,100	9,700	74,600	38,400	23,000	73,600	80,600	34,700	29,800
27	35,200	12,900	9,600	10,400	10,100	53,500	40,200	22,700	62,300	68,800	34,200	31,200
28	34,700	12,500	10,100	10,100	10,600	53,500	38,400	22,700	58,700	53,500	33,700	32,200
29	35,800	12,300	10,400	10,100	10,600	55,200	37,400	47,100	60,500	47,800	32,700	30,800
30	37,900	12,100	10,600	10,100	---	59,600	37,400	66,000	62,300	42,800	31,700	30,300
31	39,000	---	11,100	10,200	---	62,300	---	60,500	---	40,800	31,200	---
TOTAL	1,089,600	720,100	367,900	351,100	276,300	995,900	1,489,400	991,200	1,999,500	1,758,600	1,148,700	885,500
MEAN	35,150	24,000	11,870	11,330	9,528	32,130	49,650	31,970	66,650	56,730	37,050	29,520
MAX	39,000	38,400	17,000	13,300	10,600	86,800	88,800	66,000	82,600	80,600	44,200	32,200
MIN	32,700	11,500	9,200	9,900	8,900	10,800	29,800	22,700	41,500	40,800	31,200	27,000
AC-FT	2,161,000	1,428,000	729,700	696,400	548,000	1,975,000	2,954,000	1,966,000	3,966,000	3,488,000	2,278,000	1,756,000

Table 16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1948 TO SEPTEMBER 1949 DAILY MEAN VALUES												
1	29,800	35,800	18,800	8,400	12,100	13,000	71,700	27,500	33,700	36,800	28,400	26,600
2	33,200	36,800	19,100	8,600	12,100	13,000	68,900	27,000	37,900	37,900	28,400	26,600
3	40,200	37,400	18,500	9,100	11,700	13,000	114,000	27,000	36,800	37,400	27,500	26,200
4	39,600	37,900	18,500	9,400	11,700	13,000	137,000	26,600	34,200	35,800	27,000	26,200
5	36,800	37,900	18,200	10,200	11,700	13,000	162,000	29,300	28,900	34,200	26,600	25,800
6	36,300	37,400	17,200	11,700	11,500	13,500	175,000	30,800	26,200	32,700	25,800	25,800
7	36,300	37,400	14,800	11,900	11,300	16,000	166,000	28,900	34,200	31,700	24,900	25,800
8	37,900	38,400	8,600	11,500	11,500	19,000	164,000	26,600	29,300	31,200	24,500	25,800
9	40,800	40,200	6,200	11,700	12,100	25,000	141,000	25,300	40,800	30,800	24,500	25,800
10	40,200	40,200	5,500	12,100	12,500	32,000	95,200	25,300	42,800	28,900	24,900	25,800
11	39,000	38,400	4,500	12,100	13,000	36,000	73,600	25,800	39,000	28,900	25,800	25,800
12	37,400	35,800	4,500	12,100	13,000	37,000	64,100	26,600	36,300	28,400	26,200	26,200
13	36,800	33,200	4,200	11,900	13,400	37,000	54,400	26,600	34,700	29,300	25,800	26,200
14	36,300	31,200	4,200	12,100	13,200	37,500	47,100	26,200	35,200	28,400	24,500	26,200
15	36,300	27,500	4,400	12,100	13,000	37,500	39,600	26,200	34,200	27,500	25,300	26,200
16	36,300	24,500	5,000	11,900	13,000	35,000	35,200	25,800	31,700	28,000	24,900	26,200
17	35,800	21,700	5,700	11,900	12,800	30,500	33,200	26,200	31,700	29,800	25,800	26,600
18	36,800	19,900	6,400	12,100	13,000	26,500	29,300	26,600	42,800	30,800	26,600	27,000
19	36,300	18,000	6,400	12,100	12,800	25,500	28,400	25,300	50,200	29,800	28,000	27,000
20	36,300	18,000	6,800	11,900	12,800	24,000	27,500	23,800	52,600	28,400	28,000	27,000
21	35,800	17,200	5,800	11,700	12,600	23,000	27,000	24,500	57,800	27,500	26,600	28,000
22	36,800	17,000	5,800	11,700	12,900	21,500	24,900	24,900	52,600	25,800	26,600	28,900
23	36,300	17,500	5,900	11,900	12,700	20,000	24,500	25,800	48,600	24,900	27,000	28,400
24	35,200	18,200	6,100	11,700	12,300	25,000	27,500	27,000	44,900	25,300	26,200	27,500
25	33,700	18,800	6,200	11,900	11,900	55,300	31,700	42,800	42,200	26,600	24,900	26,600
26	32,700	19,100	6,900	12,100	12,000	110,000	31,200	46,400	40,200	28,000	25,300	25,800
27	32,200	19,300	7,100	11,900	12,500	70,800	29,300	46,400	40,200	28,900	25,800	24,900
28	33,200	19,600	6,900	11,700	12,800	60,500	27,500	42,800	39,000	28,000	25,800	24,500
29	33,700	20,200	7,200	11,700	---	67,900	27,000	38,400	37,900	26,600	26,600	24,100
30	35,800	19,100	7,200	11,700	---	71,700	25,800	35,200	37,400	25,800	27,000	24,100
31	35,800	---	7,800	11,900	---	80,600	---	33,200	---	26,600	27,000	---
TOTAL	1,119,600	833,600	270,400	354,700	347,900	1,103,300	2,003,600	920,800	1,174,000	920,700	812,200	787,600
MEAN	36,120	27,790	8,723	11,440	12,420	35,590	66,790	29,700	39,130	29,700	26,200	26,250
MAX	40,800	40,200	19,100	12,100	13,400	110,000	175,000	46,400	57,800	37,900	28,400	28,900
MIN	29,800	17,000	4,200	8,400	11,300	13,000	24,500	23,800	26,200	24,900	24,500	24,100
AC-FT	2,221,000	1,653,000	536,300	703,500	690,100	2,188,000	3,974,000	1,826,000	2,329,000	1,826,000	1,611,000	1,562,000

Table 16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1949 TO SEPTEMBER 1950 DAILY MEAN VALUES												
1	24,500	28,900	14,600	6,500	8,100	8,300	65,400	46,700	27,000	72,600	27,000	28,900
2	24,500	26,600	14,600	6,500	8,400	8,100	124,000	43,900	26,600	64,100	27,000	28,900
3	24,900	25,800	14,400	6,500	8,400	8,100	92,500	42,400	25,100	53,500	26,200	28,900
4	24,900	25,300	14,200	6,500	8,400	7,500	78,200	41,100	24,200	49,400	25,800	28,400
5	24,900	23,800	13,700	6,600	8,400	7,500	71,800	40,500	25,100	45,600	26,600	28,900
6	25,300	22,700	13,900	7,200	8,300	8,700	88,000	40,600	27,500	40,200	26,600	28,400
7	24,900	21,700	13,300	7,600	8,100	12,700	85,000	41,400	28,200	37,400	27,000	27,500
8	24,500	21,100	13,100	8,000	8,000	14,800	88,200	46,000	27,600	37,400	27,000	27,000
9	24,900	20,200	12,900	8,100	8,100	14,200	82,500	65,200	27,300	39,000	27,500	26,600
10	26,600	19,600	11,700	8,400	8,100	12,700	89,600	63,400	27,300	41,500	28,900	27,000
11	26,600	18,800	11,300	8,400	8,300	11,300	78,100	59,100	27,300	47,800	30,300	27,500
12	28,400	18,200	8,100	8,400	8,100	10,200	65,800	59,900	27,200	51,000	30,800	27,500
13	28,000	17,700	8,100	8,300	8,300	9,600	59,700	54,300	27,200	47,800	29,300	27,500
14	26,200	17,200	6,600	8,100	7,800	9,400	53,700	47,800	28,000	46,400	28,000	27,000
15	25,800	16,700	6,300	7,800	8,000	9,400	68,800	45,200	35,700	44,200	28,400	27,000
16	26,600	16,500	5,500	7,800	8,600	9,400	107,000	47,200	51,700	44,200	28,400	27,000
17	27,000	16,200	5,500	8,100	8,600	10,200	126,000	47,000	51,700	44,200	31,200	28,400
18	27,000	16,000	5,500	8,000	8,700	10,800	158,000	43,500	45,900	44,200	37,900	29,800
19	27,500	16,000	5,000	8,100	8,600	11,500	181,000	41,500	39,800	43,500	38,400	31,700
20	26,600	16,000	5,100	7,800	8,400	11,700	212,000	36,600	36,000	42,200	36,300	32,200
21	26,600	15,800	4,900	8,100	8,300	11,700	239,000	34,800	33,900	42,200	35,200	33,200
22	26,600	15,500	5,000	8,000	8,000	12,100	245,000	34,500	35,500	41,500	34,700	44,200
23	25,800	15,300	4,400	7,800	8,000	12,500	190,000	33,000	52,500	40,200	33,200	39,000
24	24,900	15,000	4,600	6,900	7,800	14,200	115,000	30,800	59,100	37,900	31,200	36,800
25	25,300	14,600	5,000	7,100	8,000	20,200	87,800	29,900	63,200	35,800	29,800	35,800
26	25,800	14,600	5,100	7,200	8,000	37,400	74,100	29,100	67,300	34,700	29,800	34,700
27	28,000	14,600	5,100	7,200	8,000	79,600	62,100	27,600	64,100	33,200	30,300	32,700
28	31,200	14,600	5,100	7,300	8,700	89,900	54,100	26,600	56,900	31,200	29,800	30,800
29	33,200	14,600	5,300	7,400	---	62,300	49,600	26,600	54,000	29,800	29,800	29,800
30	31,700	14,600	5,300	7,700	---	33,700	48,900	27,000	59,400	28,400	29,800	29,800
31	29,300	---	6,100	8,000	---	42,800	---	27,100	---	28,000	29,300	---
TOTAL	828,000	554,200	259,300	235,400	230,500	622,500	3,140,900	1,280,300	1,182,300	1,319,100	931,500	912,900
MEAN	26,710	18,470	8,365	7,594	8,232	20,080	104,700	41,300	39,410	42,550	30,050	30,430
MAX	33,200	28,900	14,600	8,400	8,700	89,900	245,000	65,200	67,300	72,600	38,400	44,200
MIN	24,500	14,600	4,400	6,500	7,800	7,500	48,900	26,600	24,200	28,000	25,800	26,600
AC-FT	1,642,000	1,099,000	514,300	466,900	457,200	1,235,000	6,230,000	2,539,000	2,345,000	2,616,000	1,848,000	1,811,000

Table 16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1950 TO SEPTEMBER 1951 DAILY MEAN VALUES												
1	29,400	34,100	8,000	16,300	14,400	14,000	48,600	27,300	39,600	50,800	32,100	33,600
2	29,400	34,100	8,000	16,800	15,300	14,200	52,300	26,900	43,900	48,600	33,100	37,900
3	28,200	34,600	7,500	17,000	15,100	15,300	48,600	26,600	53,800	48,600	34,100	53,800
4	27,700	34,600	6,500	17,300	15,100	16,300	50,000	26,600	45,800	45,800	34,100	48,600
5	28,200	34,600	5,600	17,500	14,400	17,000	67,400	26,200	42,600	39,600	33,600	42,600
6	29,400	34,100	5,300	18,100	14,200	18,100	95,600	26,200	57,000	39,000	31,700	42,000
7	30,700	33,100	6,500	18,300	14,400	18,100	103,000	26,600	59,500	36,200	30,700	43,900
8	31,200	36,800	6,600	18,300	14,200	18,100	108,000	27,700	56,200	34,600	30,700	43,900
9	31,700	39,600	7,500	18,100	13,300	18,100	91,000	30,300	62,100	33,600	32,100	43,200
10	33,600	38,400	8,500	17,800	12,900	18,100	92,800	32,100	54,600	32,600	34,100	43,200
11	33,600	35,700	9,200	17,000	12,500	17,000	103,000	34,100	50,800	33,600	36,800	42,600
12	32,600	34,100	10,200	16,800	12,100	16,500	90,000	32,100	45,200	35,700	37,900	43,900
13	32,100	31,200	10,700	16,000	12,300	15,500	75,500	31,700	40,800	34,600	38,400	40,800
14	32,100	27,700	11,500	16,500	12,300	14,800	79,100	31,200	37,300	33,600	38,400	38,400
15	31,200	25,800	12,300	16,800	12,100	14,000	71,900	30,300	35,200	34,100	37,300	35,700
16	31,200	23,900	13,800	15,500	11,700	13,100	69,200	28,200	34,100	36,200	35,700	34,100
17	30,700	23,200	16,000	15,300	11,500	12,700	50,800	26,600	33,100	37,300	37,300	34,600
18	30,300	22,200	17,500	15,100	11,300	12,300	40,200	25,800	33,100	39,000	40,200	35,200
19	29,800	20,200	17,300	14,200	11,100	12,100	36,200	25,800	34,600	36,800	42,600	35,700
20	28,600	18,600	16,000	14,400	11,100	11,900	36,200	26,600	33,100	35,200	43,900	35,700
21	28,600	16,300	14,800	13,300	11,100	11,300	34,600	29,000	31,200	34,600	41,400	36,200
22	29,000	14,400	14,800	12,700	11,100	10,900	32,600	30,300	30,300	35,200	38,400	35,200
23	30,300	11,100	14,800	12,300	11,500	11,100	30,300	29,800	32,100	36,800	36,800	34,100
24	32,600	9,000	14,200	11,900	11,500	10,900	29,800	29,800	37,300	36,200	35,700	32,600
25	34,100	8,000	13,500	12,700	11,900	11,100	29,800	30,700	62,100	34,600	36,200	31,700
26	34,600	7,500	13,100	12,500	11,900	12,000	29,800	32,600	64,700	33,600	36,800	32,600
27	34,600	7,000	13,500	12,100	12,300	15,000	29,800	31,200	61,200	33,100	36,800	33,100
28	35,200	7,000	14,000	13,800	12,900	19,200	29,000	29,000	52,300	32,600	36,200	32,100
29	35,700	7,000	14,400	13,800	---	21,800	26,200	28,200	49,300	32,600	35,700	33,100
30	35,200	7,500	14,800	13,500	---	26,600	26,200	28,600	50,000	32,100	35,200	34,600
31	34,100	---	15,500	14,200	---	57,000	---	33,600	---	32,100	34,100	---
TOTAL	975,700	711,400	361,900	475,900	355,500	514,100	1,707,500	901,700	1,362,900	1,139,000	1,118,100	1,144,700
MEAN	31,470	23,710	11,670	15,350	12,700	16,580	56,920	29,090	45,430	36,740	36,070	38,160
MAX	35,700	39,600	17,500	18,300	15,300	57,000	108,000	34,100	64,700	50,800	43,900	53,800
MIN	27,700	7,000	5,300	11,900	11,100	10,900	26,200	25,800	30,300	32,100	30,700	31,700
AC-FT	1,935,000	1,411,000	717,800	943,900	705,100	1,020,000	3,387,000	1,789,000	2,703,000	2,259,000	2,218,000	2,271,000

Table 16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1951 TO SEPTEMBER 1952 DAILY MEAN VALUES												
1	40,800	39,000	10,400	8,500	16,000	18,300	23,000	50,600	51,200	35,500	22,900	28,300
2	43,200	39,000	10,500	8,800	16,000	17,300	53,000	48,500	51,800	34,200	22,000	28,300
3	42,000	39,600	18,000	8,600	16,300	16,300	88,000	46,500	46,900	33,300	21,300	28,600
4	41,400	37,900	51,700	8,000	16,300	15,000	103,000	45,100	43,600	32,900	20,900	28,300
5	44,600	40,200	26,600	8,200	15,800	13,800	162,000	44,200	43,600	30,300	21,300	28,600
6	45,200	39,000	21,500	8,600	15,800	13,200	202,000	42,000	45,800	29,900	22,400	29,200
7	37,900	35,200	20,500	9,000	15,800	12,900	249,000	41,200	45,800	30,600	23,700	29,900
8	36,200	36,800	20,000	9,500	16,500	12,700	272,000	43,700	46,900	31,300	25,000	29,200
9	37,300	37,900	19,000	10,000	17,000	12,900	326,000	51,900	44,600	31,000	25,300	28,300
10	39,000	40,800	18,000	10,500	17,500	13,100	398,000	54,500	42,500	29,900	25,300	27,900
11	39,600	41,400	16,500	10,700	17,500	13,100	434,000	50,000	39,300	28,900	25,600	27,300
12	39,600	40,200	14,000	11,700	18,000	13,100	413,000	47,900	39,300	27,900	26,100	26,400
13	39,600	36,200	10,000	12,500	18,500	13,500	339,000	48,500	43,600	26,700	27,000	25,800
14	38,400	36,200	6,000	13,300	19,000	13,800	260,000	52,500	48,700	26,100	27,900	25,600
15	36,800	36,200	5,000	14,600	19,500	13,800	180,000	54,000	55,000	25,600	28,300	25,800
16	36,800	36,200	4,500	15,500	20,500	13,800	125,000	49,300	70,000	24,700	29,200	26,100
17	37,900	36,800	4,500	16,300	21,500	15,000	106,000	43,200	67,000	23,400	29,600	27,000
18	40,800	36,200	4,500	16,800	21,500	16,000	95,300	39,700	59,800	22,700	30,300	27,300
19	41,400	35,200	4,500	17,300	20,500	17,000	87,500	37,600	53,000	22,700	31,000	27,300
20	40,800	36,200	4,800	17,500	20,000	17,000	80,500	36,400	51,200	22,000	31,700	27,300
21	40,200	36,800	5,300	17,500	19,500	16,500	78,800	33,300	49,300	21,300	32,100	27,600
22	41,400	35,200	5,300	17,500	19,500	16,000	76,100	31,000	45,800	20,500	31,000	27,300
23	43,200	33,100	5,500	16,500	19,000	15,000	75,200	29,600	42,500	20,100	29,900	27,300
24	42,000	31,700	6,300	15,800	19,000	14,500	72,500	28,800	41,400	19,700	29,200	27,300
25	39,000	30,700	7,000	15,500	19,000	14,000	75,600	30,100	38,300	19,700	28,900	27,000
26	37,900	23,900	7,200	14,800	19,000	14,000	79,000	37,600	36,900	20,700	28,900	27,000
27	37,900	16,500	7,700	14,600	19,000	14,000	72,500	38,300	34,200	23,200	28,900	27,300
28	38,400	12,500	7,800	15,300	18,900	15,000	62,800	36,400	32,900	25,000	28,600	27,000
29	39,000	11,100	8,200	15,300	18,900	18,000	56,900	33,800	42,500	25,800	28,300	26,700
30	37,900	10,500	8,300	15,500	---	21,000	53,200	31,300	45,800	25,600	27,900	26,700
31	38,400	---	8,200	16,000	---	24,000	---	36,700	---	24,500	27,600	---
TOTAL	1,234,600	998,200	367,300	410,200	531,300	473,600	4,698,900	1,294,200	1,399,200	815,700	838,100	823,700
MEAN	39,830	33,270	11,850	13,230	18,320	15,280	156,600	41,750	46,640	26,310	27,040	27,460
MAX	45,200	41,400	51,700	17,500	21,500	24,000	434,000	54,500	70,000	35,500	32,100	29,900
MIN	36,200	10,500	4,500	8,000	15,800	12,700	23,000	28,800	32,900	19,700	20,900	25,600
AC-FT	2,449,000	1,980,000	728,500	813,600	1,054,000	939,400	9,320,000	2,567,000	2,775,000	1,618,000	1,662,000	1,634,000

Table 16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1952 TO SEPTEMBER 1953 DAILY MEAN VALUES												
1	26,800	25,600	7,000	11,500	12,600	11,000	36,100	21,200	21,900	59,200	28,500	28,300
2	26,600	25,800	7,000	11,500	12,200	11,000	30,900	36,700	24,400	53,200	28,000	28,400
3	26,300	26,600	7,500	12,000	12,500	11,000	23,100	51,000	37,000	48,500	29,100	28,700
4	26,300	26,900	8,000	12,000	12,800	11,000	21,100	56,300	36,600	47,100	34,100	27,900
5	26,300	26,900	8,500	12,000	13,000	10,500	20,400	50,100	31,500	46,000	33,000	26,800
6	26,800	26,700	8,500	11,500	13,000	10,500	20,200	43,700	27,500	44,400	32,100	26,500
7	27,100	26,800	8,000	11,200	13,000	10,500	20,500	37,900	25,000	41,500	32,900	26,700
8	27,400	27,400	8,000	11,200	13,000	10,500	22,400	34,100	41,200	38,900	32,000	26,900
9	27,900	27,600	8,000	11,200	13,000	10,500	39,700	32,200	62,000	37,300	30,900	27,000
10	28,200	28,500	8,500	11,200	13,000	10,500	41,500	31,100	61,500	36,500	30,700	27,000
11	28,200	28,600	9,000	11,000	12,900	11,000	36,000	30,100	61,900	35,600	31,000	27,800
12	28,500	27,700	9,000	11,000	12,500	12,000	29,400	27,600	60,500	35,300	30,300	29,100
13	28,900	25,800	8,000	11,000	12,500	15,000	22,700	26,700	50,800	35,300	30,800	30,200
14	29,100	23,900	7,000	11,000	12,500	16,000	19,500	26,000	46,100	34,600	30,800	31,200
15	29,100	22,000	6,500	10,800	12,400	25,000	18,200	25,700	45,500	33,400	30,800	31,100
16	28,800	21,000	6,000	10,800	12,200	32,000	17,000	25,400	66,000	32,000	31,000	30,700
17	28,900	20,200	6,000	11,300	11,800	28,000	16,300	25,200	95,000	30,900	30,900	30,500
18	28,800	19,900	6,000	11,400	11,500	24,000	16,000	25,100	103,000	30,100	29,700	30,000
19	28,300	19,200	7,000	11,200	11,500	28,000	15,700	26,500	93,200	30,300	28,000	29,500
20	27,800	18,700	9,000	11,500	11,500	41,000	15,300	29,100	76,000	30,200	27,000	29,200
21	27,900	18,100	10,500	12,200	12,000	51,000	14,900	30,900	79,000	29,100	26,400	28,800
22	27,700	17,700	11,500	12,600	12,000	48,000	14,500	28,800	102,000	28,200	25,900	28,900
23	27,800	17,500	13,000	12,300	12,000	51,000	14,000	25,600	110,000	27,100	25,900	30,100
24	28,300	17,300	14,000	12,000	12,000	49,700	14,000	23,200	102,000	26,800	26,400	31,000
25	29,400	16,600	14,000	12,000	12,000	42,000	14,100	23,400	93,700	26,000	26,500	30,400
26	29,500	15,500	14,500	12,000	11,500	37,100	14,100	22,600	89,600	26,000	27,300	29,800
27	29,500	12,000	14,500	12,200	11,500	33,100	14,100	22,100	87,800	26,700	27,900	29,300
28	28,500	10,000	13,500	12,500	11,000	29,300	14,300	22,500	82,800	28,300	28,700	28,700
29	27,400	9,000	12,500	12,500	---	27,200	15,000	23,000	74,300	28,700	28,900	29,500
30	26,800	8,000	12,000	12,500	---	26,900	16,700	23,200	66,000	29,100	29,100	30,200
31	25,900	---	11,500	12,500	---	27,600	---	22,800	---	29,000	28,600	---
TOTAL	864,800	637,500	294,000	361,600	343,400	761,900	627,700	929,800	1,953,800	1,085,300	913,200	870,200
MEAN	27,900	21,250	9,484	11,660	12,260	24,580	20,920	29,990	65,130	35,010	29,460	29,010
MAX	29,500	28,600	14,500	12,600	13,000	51,000	41,500	56,300	110,000	59,200	34,100	31,200
MIN	25,900	8,000	6,000	10,800	11,000	10,500	14,000	21,200	21,900	26,000	25,900	26,500
AC-FT	1,715,000	1,264,000	583,100	717,200	681,100	1,511,000	1,245,000	1,844,000	3,875,000	2,153,000	1,811,000	1,726,000

Table 16. Daily discharge for the Missouri River at Chamberlain (station 06443000) for the periods September 1928 to September 1929 and April 1945 to September 1954—Continued

[---, no data; MAX, maximum value; MIN, minimum value; AC-FT, acre-feet]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1953 TO SEPTEMBER 1954 DAILY MEAN VALUES												
1	31,400	40,800	17,000	8,500	9,700	13,500	15,800	28,000	28,400	12,600	38,800	38,500
2	31,300	37,700	16,900	8,500	9,700	13,000	15,100	28,300	29,500	13,100	38,800	38,700
3	30,800	34,900	16,700	8,500	9,800	12,000	14,300	28,600	31,100	13,400	39,600	38,800
4	30,800	32,900	16,600	8,700	9,800	10,000	13,400	28,800	31,000	13,700	39,800	38,800
5	30,700	31,700	16,300	8,800	9,800	10,400	13,000	28,400	28,300	14,100	39,200	39,200
6	30,400	31,200	16,000	8,600	9,800	15,000	12,700	27,600	26,600	14,200	39,100	39,400
7	30,700	31,200	15,100	8,500	9,800	22,200	12,600	27,300	28,400	14,100	38,800	39,900
8	31,300	31,200	14,200	8,500	9,800	26,000	13,100	26,600	28,400	13,800	38,500	39,900
9	31,200	30,900	13,200	8,000	9,800	21,900	13,800	26,100	26,200	15,000	38,300	39,700
10	31,300	30,400	9,000	7,500	10,000	20,900	19,800	25,800	25,700	16,200	38,200	40,400
11	31,100	29,900	10,000	7,000	10,000	20,500	26,100	25,500	27,500	20,000	38,500	40,700
12	31,000	29,800	11,000	6,500	10,500	20,200	25,100	25,100	37,700	22,000	39,000	40,700
13	31,500	29,700	11,000	6,000	11,000	18,500	24,400	24,900	35,000	23,500	38,900	40,200
14	32,100	29,000	10,000	6,500	11,000	17,000	26,600	24,500	34,400	23,800	39,000	39,400
15	32,200	27,500	9,000	7,000	11,000	17,000	29,900	23,400	32,000	23,800	38,800	39,000
16	31,900	25,500	7,500	7,500	11,500	22,000	30,400	23,100	31,100	23,800	38,400	38,600
17	31,500	23,900	5,800	8,500	11,500	17,000	29,300	22,900	27,500	25,400	39,200	38,600
18	30,900	22,500	5,800	9,000	11,500	15,000	27,600	23,000	23,600	27,900	39,400	38,700
19	30,700	21,700	5,800	9,500	11,500	14,400	25,900	23,200	19,900	28,600	38,800	39,000
20	31,300	21,200	5,800	10,000	11,500	14,800	25,400	23,400	17,200	28,600	38,200	39,300
21	32,200	20,200	5,500	10,000	11,500	17,900	27,400	23,200	15,400	29,500	39,200	39,200
22	33,600	19,100	5,000	9,500	13,000	22,200	28,600	23,200	14,600	32,100	39,600	39,000
23	33,900	18,200	5,000	8,500	17,000	24,000	28,900	23,100	14,200	34,400	40,700	39,000
24	33,000	17,700	5,000	8,500	16,700	25,600	27,200	23,300	13,900	34,800	40,000	38,300
25	32,700	17,200	5,000	8,600	14,900	29,200	27,600	23,200	13,400	34,500	39,600	38,600
26	32,400	17,100	5,000	8,700	15,000	27,800	27,600	23,800	13,200	34,000	38,300	38,800
27	32,700	17,200	5,000	8,800	13,900	26,200	27,400	24,600	13,200	34,900	38,200	38,800
28	33,400	17,300	6,500	8,900	13,600	22,100	27,400	26,200	13,100	35,500	38,200	38,800
29	35,200	17,300	7,500	9,000	---	20,300	28,100	26,200	13,000	35,600	38,300	38,000
30	45,500	17,000	7,500	9,200	---	19,000	28,100	26,300	12,400	36,300	38,300	38,300
31	44,100	---	8,000	9,500	---	17,600	---	27,200	---	38,500	38,600	---
TOTAL	1,012,800	771,900	297,700	260,800	324,600	593,200	692,600	784,800	705,900	767,700	1,206,300	1,174,300
MEAN	32,670	25,730	9,603	8,413	11,590	19,140	23,090	25,320	23,530	24,760	38,910	39,140
MAX	45,500	40,800	17,000	10,000	17,000	29,200	30,400	28,800	37,700	38,500	40,700	40,700
MIN	30,400	17,000	5,000	6,000	9,700	10,000	12,600	22,900	12,400	12,600	38,200	38,000
AC-FT	2,009,000	1,531,000	590,500	517,300	643,800	1,177,000	1,374,000	1,557,000	1,400,000	1,523,000	2,393,000	2,329,000

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation

[Where a pond forms behind a dam, the location given is that of the dam. A “/” indicates the dam is located on a divide between quadrants and an “&” indicates the pond or dam is located in both quadrants. Those sites visited in February 1993 include a date of visitation. All other ponds listed were shown on aerial photographs taken in August and September 1991. Estimated size: a, less than 1 acre; b, equal to or greater than 1 acre but less than or equal to 5 acres; c, greater than 5 acres but less than or equal to 20 acres; d, greater than 20 acres. N, not visited; NA, not accessible at time of attempted visit; --, no data or not applicable]

	Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
105-71-	5CBA	a	N	--	--	--
	6BDBD	b	N	--	--	--
	6CBAB/C	b	N	--	--	--
	7BBCA	b	N	--	--	--
105-72-	1AABD	b	N	--	--	--
	1BBBC	a	N	--	--	--
	1BCCD	a	N	--	--	--
	2BAAA	a	N	--	--	Dugout.
	2CCBA	b	N	--	--	--
	3ADCA	b	N	--	--	--
	3CDB	b	N	--	--	--
	4BBBC	a	N	--	--	Dugout.
	4CCDD	b	N	--	--	--
	4DAAA	b	N	--	--	--
	5BADA/D	b	N	--	--	--
	5CDDD	a	N	--	--	--
	5DAA/D	c	N	--	--	--
	6AABC	a	N	--	--	Dugout.
	6CCCA	a	N	--	--	--
	6CCDD	b	N	--	--	--
	6DDAA	a	N	--	--	--
	7AABA	a	N	--	--	Dugout.
	8ABCA	b	2- 9-93	Poor	No	Dry.
	9ACCC	c	N	--	--	--
	9BADC	b	N	--	--	--
	10AABC	b	N	--	--	--
	10BCBB	b	N	--	--	--
106-71-	6BCAB	b	N	--	--	--
	6CBA	b	N	--	--	--
	6CBBC	a	N	--	--	--
	6CCC	a	N	--	--	Dam breached.
	7BAA	a	N	--	--	--
	19BCAA	b	N	--	--	--
	20CBDB/C	b	N	--	--	Dam possibly breached.
	21CCAA	a	N	--	--	--
	29BDAB/BA	a	N	--	--	--
	29CADA	a	N	--	--	Dam possibly breached.
	30BDC	b	N	--	--	--

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
106-71- 30CADB	a	N	--	--	--
30DAAB	b	N	--	--	--
30DBB	c	N	--	--	--
31BACB	a	N	--	--	Dam breached.
31CADA/D	b	N	--	--	Dam breached.
106-72- 1CDDB	b	2-26-93	Poor	No	Dry; dam breached.
2BACD	a	N	--	--	--
2DAAA1	a	N	--	--	Possibly not a present or former stock pond.
2DAAA2	a	N	--	--	Possibly not a present or former stock pond.
2DDBC	b	NA	--	--	--
3BABB	a	N	--	--	--
3CAAD	a	NA	--	--	--
4BCBC	a	2- 9-93	Above average	Yes	Spring fed.
7ACDB	a	N	--	--	--
8AAAC	a	N	--	--	--
8AABB	a	N	--	--	Dam possibly breached.
8CBDB	a	N	--	--	--
9ACBD	b	N	--	--	--
9BCA/D	b	N	--	--	--
9DBA/B	b	2-26-93	Poor	No	Dry; overgrown with vegetation.
10ADDC	a	N	--	--	--
14DCBB	a	N	--	--	--
15ABAD	a	N	--	--	--
15DBDD	b	N	--	--	--
16ADCC	a	2-26-93	Above average	No	Frozen to bottom.
16BAAB	b	N	--	--	--
17CCAB	a	N	--	--	--
17CDDC	b	2-26-93	Above average	No	Frozen to bottom
17CDDD	a	N	--	--	--
18ACDA/D	a	N	--	--	--
19ACBB/C	b	N	--	--	--
19ACDC	a	N	--	--	--
19BABC	a	N	--	--	--
19CCAD	b	N	--	--	--
19CDBB	b	N	--	--	--
19DCAD	a	N	--	--	Dugout.
20CDAB/BA	b	N	--	--	--
20DCBC	a	N	--	--	Dugout.
21CACD	a	N	--	--	--
21CCCA	a	N	--	--	--
21DDCC/D	b	N	--	--	--

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
106-72- 22ADC	b	N	--	--	--
22BACB	b	N	--	--	--
23ADDA	a	N	--	--	--
23BCA	a	N	--	--	--
24ABBB	b	N	--	--	--
25ADCD	a	N	--	--	--
25DACD	b	N	--	--	--
26AAAA	b	N	--	--	--
26BBBB	a	N	--	--	--
26BBBD	c	N	--	--	Dam breached.
26CBDA	a	N	--	--	Dugout.
26DBCA	a	2-26-93	Poor	No	Dry; overgrown with vegetation.
26DBDD	a	N	--	--	--
27AAAB	a	N	--	--	--
27DBCD	a	N	--	--	--
28BACD1	a	N	--	--	--
28BACD2	a	N	--	--	--
28DBA/D	b	2-26-93	Poor	No	Dry; overgrown with vegetation.
28DDDC	b	N	--	--	--
29BACD	a	N	--	--	Dugout.
29DABB	a	N	--	--	Dugout.
30ABAC	a	N	--	--	Dugout.
30ABBD	b	N	--	--	--
30BAAA & ABBB	c	N	--	--	--
30BAAC	a	N	--	--	--
31ACAA	b	N	--	--	--
31BBCC	a	N	--	--	Dugout.
31DADC	b	N	--	--	--
32AADB	b	N	--	--	Dugout.
32BABD	a	N	--	--	Dugout.
32CDBA	a	N	--	--	Dugout.
32CDCA	b	N	--	--	--
32DDAC	a	N	--	--	Dugout.
33BBD	a	N	--	--	Dugout.
33CDDD	a	N	--	--	Dugout.
33DDDD	a	N	--	--	Dam breached.
34ABAB	a	N	--	--	--
34BCC	d	2-26-93	Above average	No	Large; overgrown with vegetation; frozen to bottom.
34BD	--	2-26-93	Poor	No	Dry; overgrown with vegetation.
34CCDB	b	N	--	--	--
35ABBC	a	N	--	--	Dam breached.

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
106-72- 36ACD	a	N	--	--	--
36DABD	c	N	--	--	--
106-73- 1AAAA	a	N	--	--	Dam breached.
1BDBB	a	N	--	--	--
2BBAA	b	N	--	--	--
3ACAC	b	N	--	--	--
4AADD	a	N	--	--	Dam breached.
4ABDC	a	N	--	--	Dugout.
4BDDC	c	N	--	--	--
6ADAC	b	N	--	--	Dam breached.
6BABC	a	N	--	--	Dry; dam possibly breached.
6BDAA	a	N	--	--	Dugout, dry.
106-74- 1BAAB	b	N	--	--	--
2AAC/D	a	N	--	--	--
3BCBD	b	N	--	--	--
4ABCB	b	N	--	--	--
4ABCA/DC	b	N	--	--	Dam breached.
106-75- 1AAAA	a	N	--	--	Possibly dry.
1BBCD	b	N	--	--	--
2BDDA/D	a	N	--	--	Dugout.
3ADBB/C	b	N	--	--	--
3BACA/B	a	N	--	--	--
3BBAB/C	b	N	--	--	--
4ACC	d	N	--	--	--
4ACDD	a	N	--	--	Possibly a stock pond.
4BBCA	a	N	--	--	--
106-76- 3BDCC	a	N	--	--	--
6AAAA	a	N	--	--	--
106-77- 1BCAC/D	b	N	--	--	--
1BCCC	a	N	--	--	--
2ADCC	a	N	--	--	Dugout.
2BBAD	a	N	--	--	Dugout.
2BBBB	b	N	--	--	--
3ABDB	a	N	--	--	Possibly a dugout.
107-72- 32AADD	b	N	--	--	--
32CDBC	a	N	--	--	--
33DCBA/B	b	N	--	--	--
35DBDD & DACC	a	N	--	--	Dam breached.
107-73- 4DBA	b	N	--	--	--
4DCDD	a	N	--	--	Dugout.
4DDCB	a	N	--	--	Possibly a slough.
7DBCA	a	N	--	--	--

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

	Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
107-73-	8ADCC	a	NA	--	--	--
	8BCAC	a	N	--	--	--
	9DBDC	b	N	--	--	--
	10CBCB	a	N	--	--	--
	15ACCD	b	N	--	--	Sewage pond.
	15ACDC & DBAB	b	N	--	--	Sewage pond.
	15ACDD	a	N	--	--	Sewage pond.
	15DBAA	b	N	--	--	Sewage pond.
	15DBB/C/D	b	N	--	--	Sewage pond.
	15CBC	b	N	--	--	--
	15CCAD	a	N	--	--	--
	16ACDC/D	b	2- 9-93	--	Yes	Sewage lagoon.
	16CBBD	a	2-23-93	Poor	No	Dry; overgrown with vegetation; dam breached.
	17AABB	a	N	--	--	--
	17BCAC	b	N	--	--	Possibly a slough.
	17BCD	b	N	--	--	Possibly a slough.
	17CDAB	a	N	--	--	--
	17DDDD	a	N	--	--	--
	18AACC	b	N	--	--	Possibly a sewage pond.
	18ABDA	a	N	--	--	Possibly a sewage pond.
	18ABDD	a	N	--	--	Possibly a sewage pond.
	18BAAD	a	N	--	--	--
	18DCAA	a	N	--	--	--
	18DDCD	a	N	--	--	--
	19AAAA	a	2-23-93	Below average	No	Overgrown with vegetation; frozen to bottom.
	19ACC	b	N	--	--	--
	19ADAA/B	a	2-23-93	Poor	No	Dugout dry.
	19BCAC	b	2-23-93	Below average	Yes	--
	19BDC	b	2-23-93	Poor	No	Dry; dam breached.
	19CBBA	b	N	--	--	--
	19DBAB	a	N	--	--	--
	19DCAB	a	N	--	--	Dugout.
	20BBDD	b	2-23-93	Poor	No	Dry.
	20DCAB	b	N	--	--	--
	20DDBD	a	N	--	--	--
	21BBAC	a	N	--	--	--
	22ABAD	a	N	--	--	--
	22ABCA	a	N	--	--	--
	23BCBD & BCAC1	a	N	--	--	--

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
107-73- 23BCBD & BCAC2	a	N	--	--	--
23CDCA/D	b	N	--	--	--
24CCDB	b	2-26-93	Poor	No	Dry; overgrown with vegetation.
24CCDD	a	N	--	--	--
24CDCA	a	N	--	--	--
25CCAA	a	N	--	--	--
29DBAA	b	N	--	--	--
30CBCB	a	N	--	--	--
30CCAC	b	2- 8-93	Poor	Yes	Dam center slumped; overgrown with trees.
31AACA	a	N	--	--	--
32BCCC/D	b	N	--	--	--
33AABB	b	N	--	--	--
33ACBC	a	N	--	--	Possibly dry.
33BBD	b	N	--	--	--
33DABA/B	c	N	--	--	--
34CACC	a	N	--	--	--
34CBDA	a	N	--	--	--
35CDDC	b	N	--	--	--
36BCC	b	N	--	--	--
107-74- 3DCDD	a	N	--	--	--
3DDBA	a	N	--	--	Dam breached.
3DDB	b	N	--	--	Dam breached.
6BDA	c	N	--	--	--
7BDCD	b	N	--	--	--
7CABC/CA/ CB	b	N	--	--	--
7DDAA	a	N	--	--	--
8CAAD	a	N	--	--	Dugout.
9DCAB	a	N	--	--	Dugout.
9DCAA	a	N	--	--	Dugout.
10BAAB	a	N	--	--	--
11BBAA	a	N	--	--	--
11CBCB	a	N	--	--	--
12ACBA	a	N	--	--	--
12BCBB	a	N	--	--	--
12DDCB	a	N	--	--	Possibly a slough.
13ABBD	a	N	--	--	Dugout.
14ADC	c	N	--	--	Dam breached.
15DADC	b	N	--	--	--
16ACBC	a	N	--	--	--
16CCCA	a	N	--	--	--

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
107-74- 16DADB	a	N	--	--	--
18ACBD	b	N	--	--	--
19BBAA	a	N	--	--	--
22BADD	a	N	--	--	Dugout.
22CAAC	a	N	--	--	--
22CCBA	a	N	--	--	--
23ADCA	b	N	--	--	--
23CADD	a	N	--	--	--
23CDAD	c	N	--	--	--
24ABDB	b	N	--	--	Dam possibly breached.
24CADB	b	N	--	--	Dam breached.
24CDDD & DCCC	c	N	--	--	--
25CCB	c	N	--	--	--
25DBAB	b	N	--	--	Dam breached.
26BADD	c	N	--	--	--
27ABAA	a	N	--	--	--
27ADBC	a	N	--	--	--
27CADA/B	a	N	--	--	--
28DCBB	b	N	--	--	--
30ACCA	b	N	--	--	--
31BBAA	b	2- 8-93	Above average	Yes	Spring fed.
31CAAC	b	N	--	--	--
32ADBC	a	N	--	--	--
33ADCC	b	N	--	--	--
34CCAC	b	N	--	--	--
34DDDC/D	b	N	--	--	--
35ADBB	b	N	--	--	--
35CABD	b	N	--	--	--
36AADC	b	N	--	--	--
107-75- 1BAAD	a	N	--	--	Dugout.
2BACC	b	N	--	--	--
2CDAA & CADD	b	NA	--	--	--
2DAAC	b	N	--	--	--
3BBBB	a	2-24-93	Poor	No	Dry; overgrown with trees.
3CADA/D	b	2-24-93	Above average	Yes	--
3DDCA	c	NA	--	--	--
4BB	--	2-24-93	Poor	No	Dry; overgrown with vegetation.
4ADCA	a	N	--	--	Dam breached.
4ADCC/D	a	N	--	--	--
4CA	a	2-24-93	Below average	No	Dry; overgrown with vegetation, although dam appears to be in good condition.

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
107-75- 4CBAA/B	a	2-24-93	Below average	No	Dry; overgrown with vegetation, although dam appears to be in good condition.
5ABCB	a	N	--	--	--
5BBCD	b	N	--	--	--
5 DAB	a	N	--	--	--
5DDAD	b	N	--	--	--
6AABA	b	N	--	--	--
6ACBB	b	N	--	--	--
6ADDB	b	N	--	--	--
6BCAC	b	N	--	--	--
6DABC & DBAD	b	N	--	--	--
6DBDD	b	N	--	--	--
7AADC/D	c	N	--	--	Dam breached.
7DCCC/D	b	2-11-93	Poor	No	Overgrown with vegetation.
8BBBA & BBAB	b	--	--	--	Dam breached.
8BCDD	c	N	--	--	--
8CBB	c	N	--	--	--
9ABAA/B	b	N	--	--	--
9BBCD/BC	a	N	--	--	Dam breached.
9BBD	b	N	--	--	--
9BCBA	a	N	--	--	--
9CBAB	a	N	--	--	--
9DCCA/B	b	N	--	--	--
9DCCD	a	N	--	--	Dam breached.
10DAB & ADC	b	2-24-93	--	No	--
11BCC & CBA/B	b	--	--	--	--
11DDCA & DDDb	b	2- 8-93	Above average	Yes	--
12BADD	b	N	--	--	--
13ABCD	a	N	--	--	--
13BDDC	b	N	--	--	--
13DBCD	a	N	--	--	--
14DDDD & 13CCCC	c	N	--	--	--
15ACBC	b	N	--	--	--
15CAAB	a	N	--	--	Dam possibly breached.
15CBCD/DC	b	N	--	--	--
16AAB	b	N	--	--	--
16BDBB & BACC	b	N	--	--	--

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
107-75- 16CCDB & CCAC	b	N	--	--	--
16CDDA	b	N	--	--	--
17ADBC	b	NA	--	--	--
17ADDB	b	NA	--	--	--
17BDBB	a	2- 9-93	Poor	No	Dry.
17CCAB	a	N	--	--	Dugout.
18ADBB & ACAA	c	N	--	--	Dam breached.
18BACB & BBDB	a	N	--	--	--
19DAA	a	N	--	--	--
20BCDA	c	N	--	--	--
21ACAD & ADBC	c	N	--	--	--
21BDCB	a	N	--	--	--
22AABC/D	b	N	--	--	--
22CBAC	b	N	--	--	--
22DDB	b	N	--	--	--
23ABDC & ACAB	b	N	--	--	--
24ACAB	a	N	--	--	--
24ADCB	a	N	--	--	--
25BCBB	a	N	--	--	--
25DBAA/B	a	N	--	--	--
26BBDC	b	N	--	--	--
26CBCC	b	N	--	--	--
27ACCB	b	N	--	--	--
28AAB	a	N	--	--	--
28BDBC	a	N	--	--	Dugout.
29CBDC/D	b	N	--	--	--
29CCAA	b	N	--	--	--
29CCDD	a	N	--	--	--
30ADDA	a	N	--	--	--
30BCD	c	N	--	--	--
31CDCD	a	N	--	--	--
31DBDD	a	N	--	--	--
32BDDBA	a	N	--	--	--
32CBDA	b	N	--	--	--
32DCDA	b	N	--	--	--
33AADA	b	N	--	--	--
33DADD	b	N	--	--	Dam breached.
33DDAA	b	N	--	--	--
34CDA/B	a	N	--	--	Dam breached.

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
107-75- 34CDAC	a	N	--	--	--
35BBAC	b	N	--	--	--
35CABA	a	N	--	--	Dugout.
35CBCB	a	N	--	--	--
35DDA/B	b	N	--	--	--
36ADDD	b	N	--	--	--
36BABA	b	N	--	--	--
36CDBA & CDAB	b	N	--	--	--
107-76- 1AAAD	b	N	--	--	--
1AACB/C/D	c	N	--	--	Dam breached.
1ABBC	b	2- 9-93	Poor	Yes	--
1CCAD/DA	a	N	--	--	--
1DABD	b	N	--	--	--
2DADA	a	N	--	--	--
3ADAC/D	b	N	--	--	--
3CABA	b	N	--	--	--
3DDDDA/B	b	N	--	--	--
3DDDB	b	N	--	--	--
5ACBD	b	NA	--	--	--
5BCBA/B	b	N	--	--	--
6CCAA	a	N	--	--	--
6CDBB	b	N	--	--	--
7ABAD	b	N	--	--	--
8ACAA	b	N	--	--	--
9CDBC	a	N	--	--	--
10ADAA/B	b	N	--	--	--
10CCBD	a	N	--	--	--
11AADD	a	2-12-93	Below average	No	Dry; overgrown with trees.
11DBAA, ADCC, & ACDD	c	N	--	--	Dry.
12BADB	a	N	--	--	Dugout.
13CAAC	b	N	--	--	--
13DCDC/D	b	N	--	--	--
14AACC	b	2-12-93	Poor	No	Dry.
14BABB & BBAA	b	N	--	--	--
14BACD	b	N	--	--	Dam breached.
14CCBD	b	N	--	--	--
15AAA	a	2-11-93	Poor	No	Dry; dam breached.
15BBAB	b	N	--	--	--
15CCCB	a	N	--	--	--

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
107-76- 15DAC	a	N	--	--	--
15DDDA	a	N	--	--	--
16BCAB & BBDC	b	N	--	--	--
16CACC/D	a	N	--	--	--
16DABD	a	N	--	--	Dam possibly breached.
17ABBB	b	N	--	--	--
17CABC & CBAD	b	NA	--	--	--
19ABDC	a	N	--	--	--
19BDCCD & BDDC	b	2-11-93	Poor	No	Dry.
20BCCC	b	N	--	--	--
20CBAC & CBAB	b	N	--	--	--
20DADB	b	N	--	--	--
21ABDD	a	N	--	--	--
21BCAA & BDBB/C	b	N	--	--	--
21CBD, CCBA, & CDBB/C	c	N	--	--	--
21DCCB	a	N	--	--	--
22ACBA	b	N	--	--	--
23BBAD, BABC, & BACA/B	b	N	--	--	--
23CABC	a	N	--	--	Dam partly breached.
23DABB	a	2-12-93	Above average	No	Frozen to bottom.
23DDDC/D	b	N	--	--	--
24CDDB	b	N	--	--	--
24DAAA/D	a	N	--	--	Possibly a dugout.
25BCAD	a	N	--	--	--
25CADC	a	N	--	--	Possibly a dugout.
25DBDA	b	N	--	--	Dam possibly breached.
26ABCD & ACBA	b	N	--	--	--
26CCBB	a	N	--	--	--
26CCC	a	N	--	--	--
27ABB & ABDB	b	N	--	--	Dam possibly breached.
27ACA/D & ADCB	c	N	--	--	--
27CABA/B	b	N	--	--	--
27DDDC	a	N	--	--	Possibly a slough.

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
107-76- 28ACCC/D & DBBA	b	N	--	--	--
28BCAA/D	b	N	--	--	--
28BDB	b	N	--	--	Dam breached.
28DCDA/B	a	N	--	--	--
29AACB	a	N	--	--	--
29CCBD	a	N	--	--	--
31ABAA/B	b	2-11-93	Poor	No	Dry.
31CCCC	a	N	--	--	Dugout.
31CCCC/D	c	N	--	--	--
31DAAD	a	2-11-93	Poor	No	Dry; overgrown with trees.
31DDDC	a	N	--	--	--
32ABAD	b	N	--	--	--
33ACDD	a	N	--	--	--
33BBCA	b	N	--	--	--
34ADCA/B	b	N	--	--	--
34BBA/D	b	N	--	--	--
34CBDA	a	N	--	--	--
35CAA/D	b	N	--	--	--
35CCA	b	N	--	--	--
36AACC	a	N	--	--	Partly breached.
36BBCA/D	a	N	--	--	--
36BBCC	b	N	--	--	--
36DABD	a	N	--	--	Dam possibly breached.
107-77- 1BBDD	b	N	--	--	--
2CBAC & CBDB/A	a	N	--	--	--
2DACC/D	b	N	--	--	--
3AADC/CD & ADBA	a	N	--	--	Dam possibly breached.
11AADC/D	b	N	--	--	--
11BACC & BBDD	d	N	--	--	--
11BCCC/D & 10ADAD	d	N	--	--	--
11DCCA/D	b	N	--	--	--
12DCAB/C	a	N	--	--	--
12DCBA	a	N	--	--	--
13DAAB & DABA	a	2-11-93	Poor	No	Dry.
13DABB	a	N	--	--	--
13DBAB/BA	c	N	--	--	--
13DDCC	b	2-11-93	Poor	No	Dam breached.
14BABB/C	b	N	--	--	--

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
107-77- 14CCBA/D	b	N	--	--	--
14DCBA	a	2-23-93	Above average	Yes	--
15ABCD & ABDC	b	N	--	--	--
22BAAB	b	N	--	--	Dam breached.
23AD center	a	N	--	--	--
23DAAC	a	N	--	--	--
23DBBA/B	b	2-11-93	Above average	Yes	--
24CADC	b	N	--	--	--
25BCDB	b	N	--	--	--
25DBDC	b	N	--	--	--
26ADBC & ADCB	a	N	--	--	--
26BDDC	a	N	--	--	Dam breached.
26CBDC	b	N	--	--	--
26DACD	a	N	--	--	--
26DBB	a	N	--	--	Dam breached.
26DDAD	a	N	--	--	--
34AADC	b	N	--	--	--
34BBCA	a	N	--	--	Dam breached.
35BDDA/D	b	N	--	--	--
35DADA/D	a	N	--	--	--
35DBDC	b	N	--	--	--
36AACC/D	a	N	--	--	--
36BDDA/B	b	N	--	--	--
108-73- 6ABAB	a	N	--	--	--
6ABDA	a	N	--	--	--
8ADA/D	b	N	--	--	Irrigation seepage or drainage pond.
8DAD	b	N	--	--	do.
8DBDB	a	N	--	--	do.
9CCBA	b	N	--	--	do.
9CDBC	b	N	--	--	do.
9CDCB	a	N	--	--	do.
16ACB	b	N	--	--	do.
16ACDC	a	N	--	--	do.
16BAAB	c	N	--	--	do.
16BCDA	a	N	--	--	do.
16BDCC	a	N	--	--	do.
16CDAD	a	N	--	--	do.
16CDBD	b	N	--	--	do.
16DAAA/D	b	N	--	--	--
17ABCD1	a	N	--	--	Irrigation seepage or drainage pond.
17ABCD2	a	N	--	--	Irrigation seepage or drainage pond.

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
108-73- 17ADA	a	N	--	--	Seepage pond.
21ABBC	a	N	--	--	Irrigation seepage or drainage pond.
21ACCB	a	N	--	--	Irrigation seepage or drainage pond.
21BDAB	a	N	--	--	Irrigation seepage or drainage pond.
33DDCC	a	N	--	--	--
34BCCC	a	N	--	--	--
108-74- 1CCDD	a	N	--	--	Irrigation seepage or drainage pond.
108-75- 31CBBA/D	b	N	--	--	--
32ABCB	a	N	--	--	--
32CDBB	a	N	--	--	Dugout.
33DAAD	a	N	--	--	Possibly a dugout.
34ADDB	b	2-24-93	Poor	No	Dry; overgrown with trees.
34DADB	a	N	--	--	--
34DDDA	a	N	--	--	--
35DDAD	b	N	--	--	--
36CBAD	b	N	--	--	--
108-76- 4DBBA/D	a	N	--	--	--
5ACBA/B	b	N	--	--	Dam breached.
6BADA	b	N	--	--	--
7BBDC & BBCD	b	2-23-93	Above average	No	--
7CADA/D	b	N	--	--	Dam breached.
8ADCD & DABA	a	N	--	--	--
8BBCD	b	2-25-93	Poor	No	Dry; dam breached.
8CDBC	a	N	--	--	--
9DCAD	a	N	--	--	--
18AAD	a	N	--	--	--
19ACAB	a	N	--	--	--
19BCAC	a	N	--	--	--
26ACCA	a	N	--	--	--
27DCBB	a	N	--	--	--
28DDDB	b	N	--	--	--
31DBBD	b	N	--	--	--
32CADA	b	N	--	--	--
33CCAD	b	N	--	--	--
35DCBA/B	b	N	--	--	--
108-77- 1BDD	c	N	--	--	--
1DBDD	b	N	--	--	Dam may be partly breached.
2ABBC	b	N	--	--	Dam partly breached.
3DCCC	a	N	--	--	Dam partly breached.
10BCCC/D	b	N	--	--	--
10DADB & DAAC/D	c	N	--	--	--

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
108-77- 11BBDD	a	N	--	--	--
11CADC	a	N	--	--	--
12BCCB	b	N	--	--	--
12CCAD	b	N	--	--	--
13ACBC	b	N	--	--	--
13CDCC & CDAA	a	N	--	--	--
14BDDC	b	N	--	--	--
15ABDD	a	N	--	--	--
23BADD	a	N	--	--	--
23CABC	b	N	--	--	--
23DDAB & DADC	b	N	--	--	--
24AAA center	a	N	--	--	--
24DCCA/B	a	N	--	--	--
27BCAB/C	a	N	--	--	--
27CDCD	b	N	--	--	--
27DCAD & DCDA	a	N	--	--	--
34AABA	a	N	--	--	--
34CDCA	b	N	--	--	--
34DAAC	a	N	--	--	--
34DADA/B	a	N	--	--	--
34DDAD/C	a	N	--	--	--
35DBBA	b	N	--	--	--
36ABAB	a	N	--	--	--
109-76- 6BCAB/C	b	2-25-93	Poor	No	Dry, overgrown with vegetation; dam breached.
6CCDA	a	N	--	--	Dry.
6CDBC/CB	a	N	--	--	Dam breached.
7AACA/B	a	2-25-93	Poor	No	Dugout; dry, overgrown with vegetation.
7ABAD	a	2-25-93	Poor	No	Dugout; dry, overgrown with vegetation.
7CCBC &	a	N	--	--	--
109-77- 12DDAD					
109-76- 8BCBD	a	2-25-93	Poor	No	Dry, overgrown with vegetation.
9DDDC	b	2-25-93	Poor	No	Dry, overgrown with vegetation.
10DCC/D	a	N	--	--	Dam breached.
14CCDB	a	N	--	--	Dugout.
14CDDD	a	N	--	--	Dam possibly breached.
17CAAC & CABD	b	N	--	--	--
18DADD	b	N	--	--	--
19BCAB	b	N	--	--	--
19BCBD	b	N	--	--	--

Table 17. Ponds, stock ponds, and dugouts on the Lower Brule Indian Reservation—Continued

Location	Estimated size	Date of visit	Condition	Water-quality sample	Comments
109-76- 20ACBB	b	N	--	--	--
21DCBD & DCCA	b	N	--	--	--
22BBCD/DC & BCBA/AB	a	N	--	--	--
27ACAA	a	N	--	--	--
28CDAC/DB	a	N	--	--	--
29BBBB/C	c	2-24-93	--	Yes	--
30ACDB/C	a	N	--	--	--
30BBCA & BBDC	b	N	--	--	--
31CABC	b	N	--	--	--
32BBDC	b	N	--	--	--
33CBDD & CCAA	c	2-24-93	Above average	Yes	--
109-77- 1DD	--	2-25-93	Poor	No	Dry, overgrown with vegetation.
2ADCA/B	b	N	--	--	--
2DDCC/D	b	N	--	--	--
3BDDB/C	b	N	--	--	--
3DABC/D	a	2-25-93	Poor	No	Dugout; dry.
10AAC	b	N	--	--	--
12AABA	a	N	--	--	Possibly a stock pond.
12BADB	b	N	--	--	--
13ADCA	b	N	--	--	--
13DBAC	b	N	--	--	--
14BDDC	b	N	--	--	--
15BCAA	b	N	--	--	--
15CCDA	c	N	--	--	Dam breached.
15DAAB	b	N	--	--	--
22CDAD	b	N	--	--	Possibly a dugout.
23DDDC	a	N	--	--	--
24ADAC	a	N	--	--	--
24BCCA/B	a	N	--	--	--
24DDCD	b	N	--	--	--
25BBAB/C	b	N	--	--	Dam breached.
26ABAD	a	N	--	--	Dam possibly breached.
27ABBC	a	N	--	--	Dugout.
35CABA	a	N	--	--	--
36BCCA	b	N	--	--	--
36BCCC	b	N	--	--	--