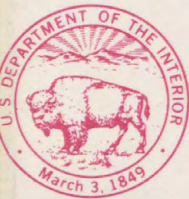
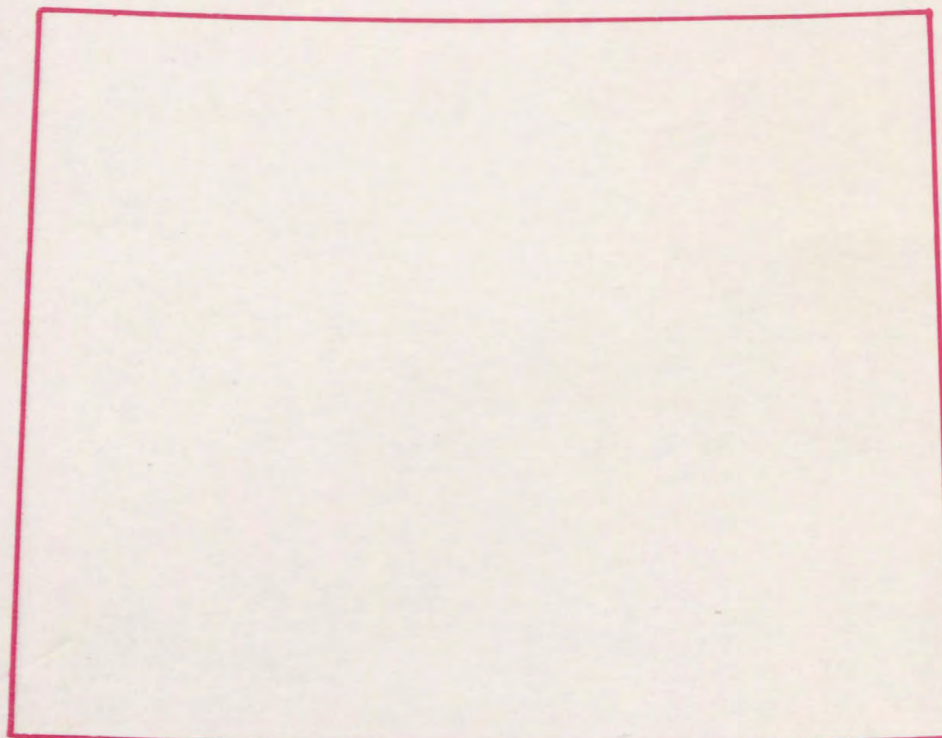
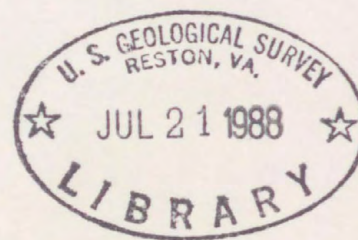


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# Water Resources Data Wyoming Water Year 1987



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT WY-87-1  
Prepared in cooperation with the State of Wyoming  
and with other agencies



## CALENDAR FOR WATER YEAR 1987

1986

OCTOBER

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    | 1  | 2  | 3  | 4  |
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NOVEMBER

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DECEMBER

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1987

JANUARY

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FEBRUARY

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MARCH

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APRIL

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JULY

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| 26 | 27 | 28 | 29 | 30 | 31 |    |

AUGUST

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SEPTEMBER

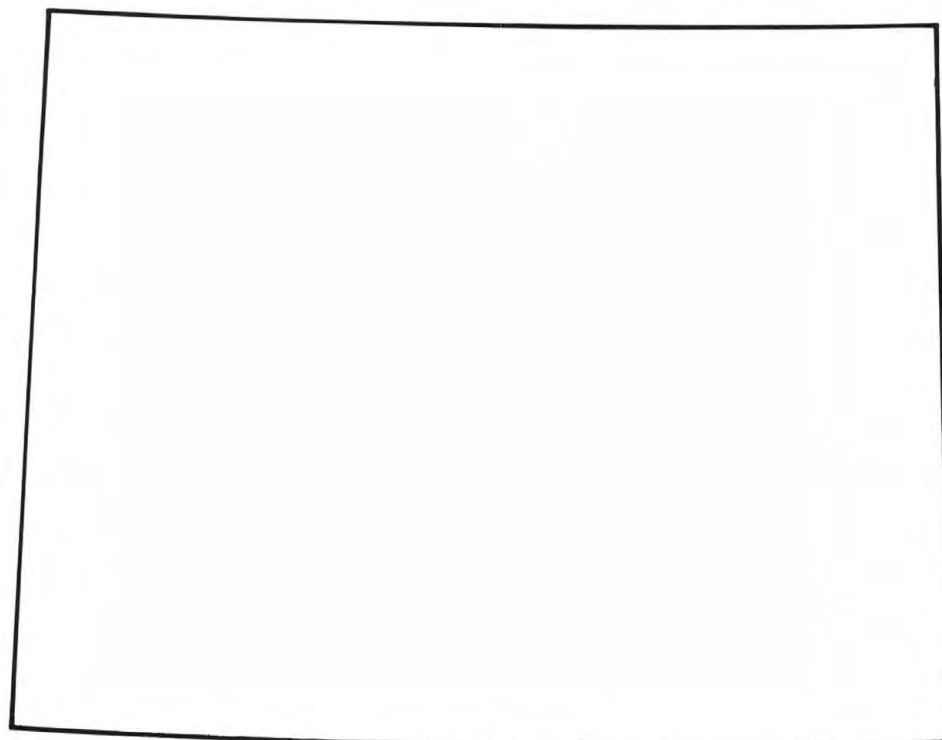
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| 27 | 28 | 29 | 30 |    |    |    |





# Water Resources Data Wyoming Water Year 1987

by S.A. Druse, W.R. Glass, P.B. McCollam, and D.A. Peterson



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT WY-87-1  
Prepared in cooperation with the State of Wyoming  
and with other agencies



UNITED STATES DEPARTMENT OF THE INTERIOR

DONALD PAUL HODEL, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

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P.O. Box 1125  
Cheyenne, Wyoming 82003



## WATER RESOURCES DATA - WYOMING, 1987

### PREFACE

This annual hydrologic data report of Wyoming is one of a series of annual reports that documents hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and the quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines.

Most of the data were collected, computed, and processed from the Casper Field Headquarters, W. R. Glass, Chief and the Riverton Field Headquarters, P. B. McCollam, Chief. The following personnel are recognized for their significant contributions to this report:

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S. L. Green typed and assembled the text of the report.

This report was prepared in cooperation with the State of Wyoming and with other agencies; and under the general supervision of James E. Kircher, District Chief, Wyoming.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                            |                                                                                             |                                     |
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| <b>REPORT DOCUMENTATION PAGE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>1. REPORT NO.</b><br>USGS/WRD/HD-88/240 | <b>2.</b>                                                                                   | <b>3. Recipient's Accession No.</b> |
| <b>4. Title and Subtitle</b><br><br>Water Resources Data for Wyoming, Water Year 1987                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                            | <b>5. Report Date</b><br>May 1988                                                           |                                     |
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| <b>7. Author(s)</b><br>S.A. Druse, W.R. Glass, P.B. McCollam, and D.A. Peterson                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                            | <b>8. Performing Organization Rept. No.</b><br>USGS-WDR-WY-87-1                             |                                     |
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| <b>15. Supplementary Notes</b><br><br>Prepared in cooperation with the State of Wyoming and with other agencies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                            |                                                                                             |                                     |
| <b>16. Abstract (Limit: 200 words)</b><br><br>Water resources data for the 1987 water year for Wyoming consists of records of stage, discharge and water quality of streams; stage and contents of lakes and reservoirs; and water levels and water quality of ground water. This report contains discharge records for 172 gaging stations; stage and contents for 16 lakes and reservoirs; water quality for 67 gaging stations, and 52 ungaged stations; and water levels for 5 observation wells. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Wyoming. |                                            |                                                                                             |                                     |
| <b>17. Document Analysis a. Descriptors</b><br><br>*Wyoming, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow-rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses.<br><br><b>b. Identifiers/Open-Ended Terms</b><br><br><br><br><br><br><br><br><br><br><b>c. COSATI Field/Group</b>                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                            |                                                                                             |                                     |
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## WATER RESOURCES DATA - WYOMING, 1987

### INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State, municipal, county, and Federal agencies, obtains a large amount of data pertaining to the water resources of Wyoming each water year. The accumulation of this data constitutes a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Wyoming" as part of the National Water Data System.

Water resources data for the 1987 water year for Wyoming consists of records of stage, discharge, and water quality of streams; stage and contents of lakes and reservoirs; and water levels and water quality of ground water. This report contains discharge records for 172 gaging stations; stage and contents for 16 lakes and reservoirs; water quality for 67 gaging stations, and 52 ungaged stations; and water levels for 5 observation wells. Locations of streamflow-gaging stations, water-quality stations, and observations wells are shown in figure 1. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Books and Open-File Reports, U.S. Geological Survey, Box 25425, Federal Center, Denver, CO 80225.

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

Beginning with the 1971 water year, water data for streamflow, water quality, and ground water are published in official Survey reports on a State-boundary basis. These official Survey reports carry an identification number consisting of the two letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data report WY-87-1." Water-Data reports are for sale in paper copy or in microfiche, by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (307) 772-2153.

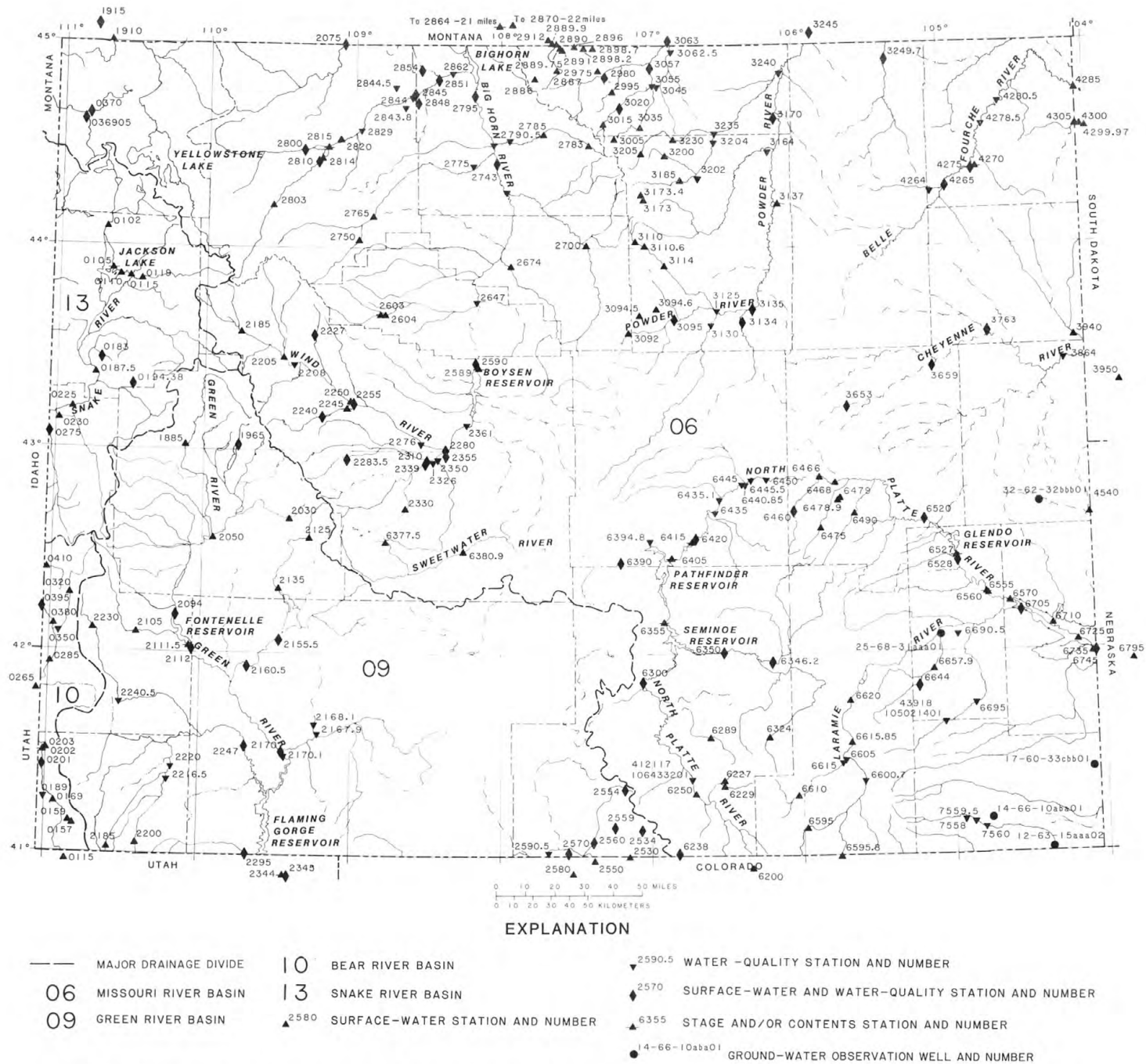


Figure 1.--Map showing locations of lake- and stream-gaging stations, water-quality stations, and ground-water observation wells, 1987 water year.

## COOPERATION

The U.S. Geological Survey and agencies of the State of Wyoming have had cooperative agreements for the systematic collection of streamflow records since 1895, for ground-water levels since 1940, and for water-quality records since 1946. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Wyoming State Engineer, Gordon W. Fassett

Wyoming Department of Agriculture, John Orton, succeeded by Donald Rolston, Commissioner of Agriculture

Wyoming Water Development Commission, Michael K. Purcell, Administrator

Wyoming Department of Environmental Quality, Randolph Wood, Director

Wyoming Economic Development and Stabilization Board, Paul C. Schwieger, Chief of Water Development

Wyoming Attorney General, A. G. McClintock

Uinta County, County Commissioners

Assistance in the form of funds and services was given by the Bureau of Indian Affairs, U.S. Department of the Interior for 3 streamflow-gaging stations and 9 water-quality stations; Bureau of Reclamation, U.S. Department of the Interior for 7 streamflow-gaging stations, 2 water-quality stations, and 2 reservoir stations; by the Bureau of Land Management, U.S. Department of the Interior for 4 streamflow-gaging stations and 8 water-quality stations; and by the Corps of Engineers, U.S. Army for 2 streamflow-gaging stations, published in this report.

## SUMMARY OF HYDROLOGIC CONDITIONS

Precipitation

Precipitation during water year 1987 exceeded the 1951-80 average for the major drainage basins except in the Snake River basin in northwestern Wyoming, where precipitation was 84 percent of average, and the Upper [North] Platte River basin in south-central Wyoming, where precipitation was 92 percent of average (table 1). In the remainder of the State, total annual precipitation was moderately greater than average: Wind River basin (115 percent), Bighorn River basin (114 percent), Powder/Little Missouri/Tongue River basins (116 percent), Green/Bear River basins (110 percent), and the Lower [North] Platte River basin (116 percent) as indicated in table 1 and figure 2. Precipitation and departures from normal (1951-80 average) for the major divisions (drainage basins) are published monthly by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration.

Drainage-basin precipitation and departures from average (table 1) are cumulated into three groups of months to reflect seasonal variation of precipitation. Precipitation in the Upper [North] Platte River basin was consistently less than average throughout the entire year. Except for the Snake River basin in northwestern Wyoming and the Upper [North] Platte River basin in south-central Wyoming, the State received greater than average precipitation during the autumn and winter months (October to March). During the spring months (April to June), significantly less than average precipitation occurred in all but the Snake and Green/Bear River basins in western Wyoming, where precipitation was slightly greater than average. This trend was reversed during the summer months (July to September) when greater than average precipitation occurred in all but the Upper [North] Platte River basin. However, most precipitation stations are in nonmountainous areas of the State and may not be indicative of precipitation in the mountains.



## WATER RESOURCES DATA FOR WYOMING 1987

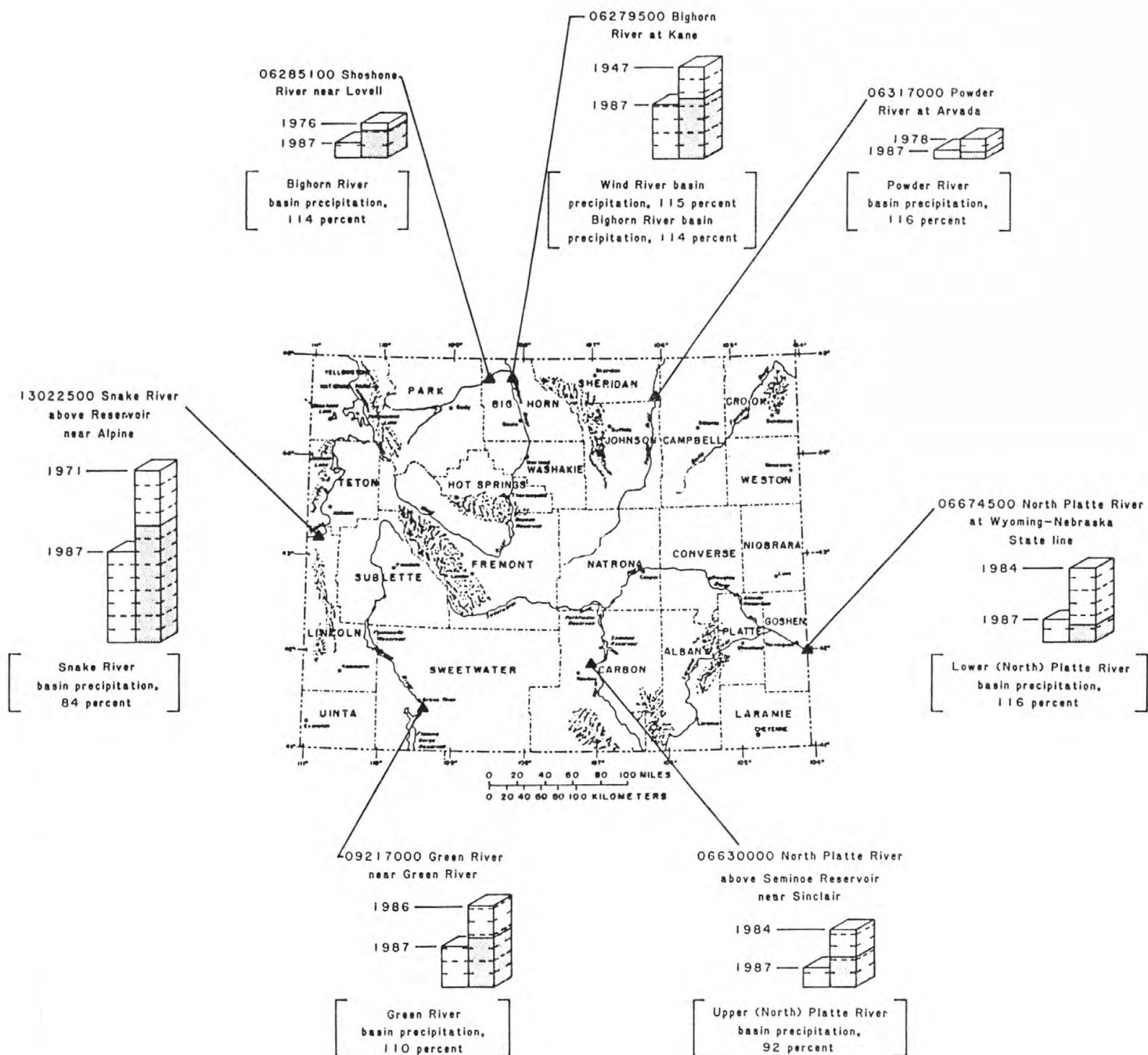
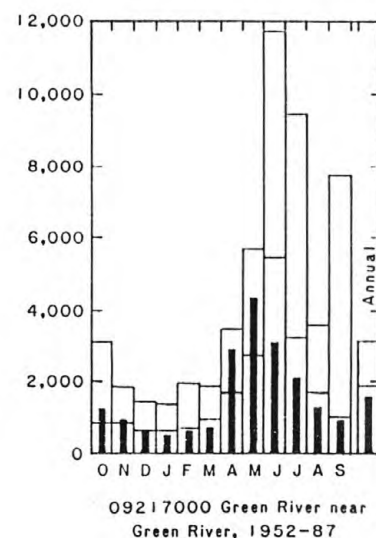
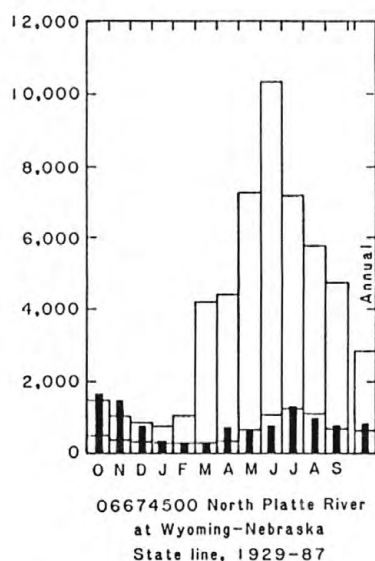
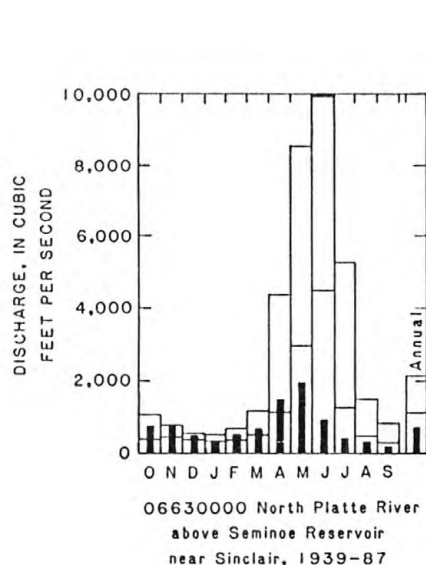
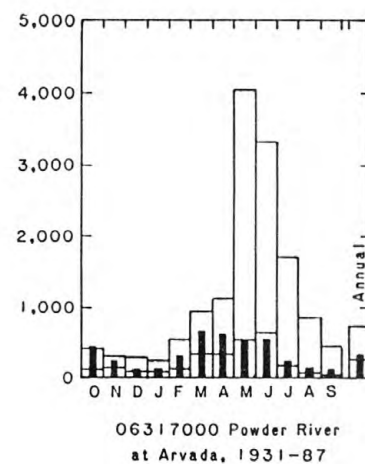
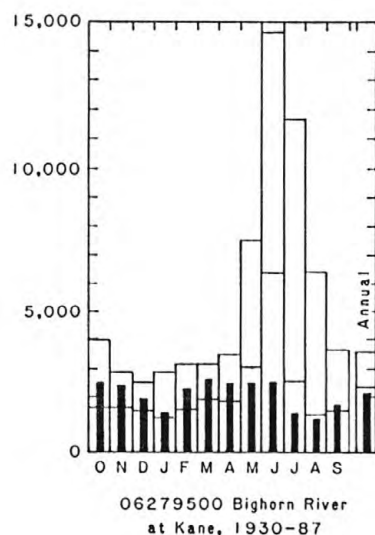
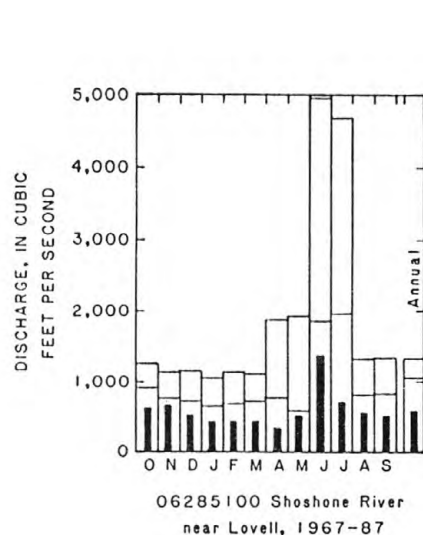
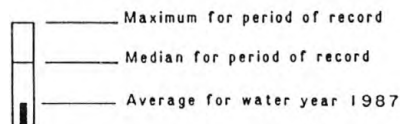


Figure 2.--Percentage of average precipitation, monthly and annual average discharge of major rivers in Wyoming for water year 1987, and monthly and annual maximum and median discharge for period of record.



## EXPLANATION

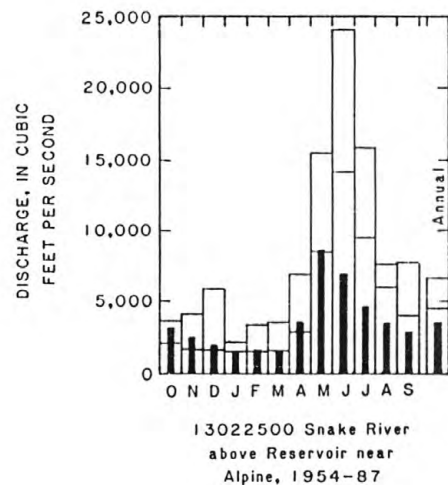
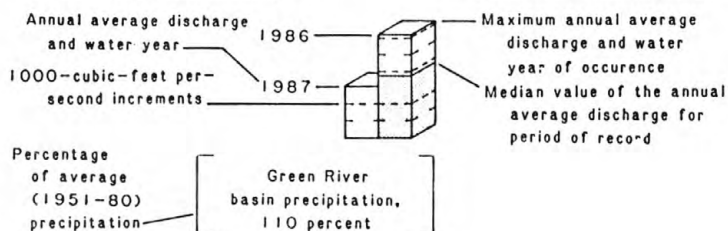
## MONTHLY OR ANNUAL DISCHARGE



## COMPARISON OF ANNUAL AVERAGE DISCHARGE

Data for water year 1987

Data for period of record



▲ STREAMFLOW-GAGING STATION SELECTED  
TO TYPIFY DRAINAGE BASIN--Station  
number and name shown above bar graph

Table 1.--Precipitation for selected periods of water year 1987 and the departures from average (1951-80) by drainage basin

[Source: Monthly publications of climatic data by National Oceanic and Atmospheric Administration]

| Drainage basin                      | Precipitation (inches) |           |               |           |                   |           |        |                    |
|-------------------------------------|------------------------|-----------|---------------|-----------|-------------------|-----------|--------|--------------------|
|                                     | October to March       |           | April to June |           | July to September |           | Annual |                    |
|                                     | Total                  | Departure | Total         | Departure | Total             | Departure | Total  | Percent of average |
| Wind River                          | 4.50                   | 1.87      | 3.78          | -1.02     | 2.54              | 0.53      | 10.82  | 115                |
| Bighorn River                       | 3.48                   | .88       | 4.29          | -.22      | 3.17              | .71       | 10.94  | 114                |
| Powder/Little Missouri/Tongue River | 5.53                   | 1.41      | 4.71          | -1.89     | 6.08              | 2.72      | 16.32  | 116                |
| Snake River                         | 7.37                   | -4.66     | 6.03          | .39       | 4.68              | .85       | 18.08  | 84                 |
| Green/Bear River                    | 4.07                   | .25       | 3.16          | .01       | 3.12              | .70       | 10.35  | 110                |
| Upper [North] Platte River          | 4.41                   | -.05      | 3.49          | -.62      | 2.78              | -.22      | 10.68  | 92                 |
| Lower [North] Platte River          | 5.95                   | 2.38      | 5.88          | -.40      | 3.91              | .14       | 15.74  | 116                |

Snowfall in the mountains provides most of Wyoming's annual water supply; the snowpack in the mountains from January to June 1987 was generally near or less than average in the major river basins. The U.S. Department of Agriculture, Soil Conservation Service, noted in their June 1, 1987 issue of "Wyoming Water Supply Outlook" that streamflow prospects for Wyoming water users remained bleak for the remainder of the water year. This confirmed the outlook in the March 1, 1987 issue which noted that most of the State could expect streamflow to be 10 to 30 percent less than normal.

#### Streamflow

Annual streamflow was predominantly less than average throughout the State except in the lower North Platte River in southeastern Wyoming and in the Powder River basin in north-central Wyoming. Monthly streamflow continued to be greater than median at most streamflow stations during the autumn and winter after the greater than normal streamflow that generally occurred during water year 1986. In most streams, there was a gradual decrease to less than median flow during the spring and summer. The seasonal variation of the streamflow and the comparison of monthly and annual discharge for water year 1987 with the median and previous maximums for the period of record, are shown for selected stations in figure 2. These stations generally are the most downstream stations on the major rivers of the State and give an indication of the water supply for the river basin. Natural flow at these stations is mostly regulated, with the exception of station 06317000, Powder River at Arvada and station 06630000, North Platte River above Seminole Reservoir, near Sinclair, which have no large reservoirs upstream and only moderate withdrawals for irrigation.

#### Floods

Problems associated with flooding were almost non-existent during water year 1987. The recurrence interval of maximum discharge at most streamflow-gaging stations was less than 2 years. Only at isolated stations were floods of the 10- to 25-year recurrence interval recorded.

Chemical Quality of Streamflow

Specific conductance of surface water during water year 1987 was not significantly different from that of the previous 10 years, based on data from seven water-quality stations. Specific conductance was chosen as an indicator of dissolved-solids concentration in water because the conductance varies directly with the concentration and species of ions in the water. These seven stations were selected to represent the major drainages of Wyoming.

The mean value of specific conductance at each station for water year 1987 was compared to the mean value for the 10 previous water years, 1977-86, using the Wilcoxon-Mann-Whitney rank sum test (table 2). This is a non-parametric counterpart to the common t-test and does not require that the data be normally distributed. The null hypothesis in each case is that the means are equal. A test statistic ( $T_R$ ) was calculated from the ranks and from a pooled standard deviation and compared to a table value ( $t_{tab}$ ) of Student's t-Distribution. The table value is  $(1 - \alpha/2)$ , where  $\alpha$  (the level of significance) equals 0.05, at the appropriate degrees of freedom for each sample size. At each of the seven stations, the test statistic was less than the table value, indicating the means for water year 1987 were not significantly different than the mean for the previous 10 water years.

Table 2.--Results of t-tests comparing mean values of specific conductance for water year 1987 with mean values for water years 1977-86 at selected water-quality sampling stations

[Specific conductance, in microsiemens per centimeter at 25° Celsius;  
 $t_R$ , calculated test statistic;  $t_{tab}$ , t-values from standard table]

| Drainage basin<br>and station<br>number | Specific conductance   |       |                                |                        |       |                                | Wilcoxon-Mann-Whitney |           |                    |
|-----------------------------------------|------------------------|-------|--------------------------------|------------------------|-------|--------------------------------|-----------------------|-----------|--------------------|
|                                         | Water year 1987        |       |                                | Water years 1977-86    |       |                                | rank sum test         |           |                    |
|                                         | Number<br>of<br>values | Mean  | Stand-<br>ard<br>devia<br>tion | Number<br>of<br>values | Mean  | Stand-<br>ard<br>devia<br>tion | $t_R$                 | $t_{tab}$ | Null<br>hypothesis |
| Bighorn River<br>06279500               | 10                     | 958   | 109                            | 106                    | 954   | 218                            | 0.16                  | 1.96      | Accepted           |
| Shoshone River<br>06285100              | 10                     | 928   | 113                            | 90                     | 884   | 264                            | -.85                  | 1.98      | Accepted           |
| Powder River<br>06317000                | 10                     | 2,780 | 469                            | 86                     | 3,030 | 1,060                          | .81                   | 1.99      | Accepted           |
| Upper North Platte<br>River<br>06630000 | 10                     | 409   | 104                            | 76                     | 406   | 122                            | -.17                  | 1.99      | Accepted           |
| Lower North Platte<br>River<br>06674500 | 8                      | 829   | 71                             | 91                     | 852   | 143                            | .55                   | 1.98      | Accepted           |
| Green River<br>09217000                 | 7                      | 679   | 191                            | 135                    | 631   | 184                            | -1.03                 | 1.96      | Accepted           |
| Snake River<br>13022500                 | 8                      | 336   | 62                             | 135                    | 328   | 66                             | -.15                  | 1.96      | Accepted           |



### Ground-Water Levels

Water levels in most wells in the observation-well network in extreme southeastern Wyoming declined during water year 1987; whereas water levels in network wells in the other areas of the State either remained virtually unchanged or rose slightly. Most of the 89 wells in the observation-well network are in areas of extensive groundwater withdrawal--mainly in southeastern Wyoming. Water in Niobrara, Goshen, and eastern Laramie Counties is withdrawn from the High Plains aquifer for irrigation; water in Platte County is withdrawn from the alluvium for irrigation. Water in central Laramie County is withdrawn from the High Plains aquifer and extensively used for domestic purposes.

Most water levels in wells in Niobrara and Goshen Counties reflected changes of less than 1 foot. Measured changes in water levels in 25 wells in Laramie County ranged from a 4-foot decline to a 1-foot rise; the median change for all wells was a 0.1-foot decline. In Platte County, water levels in most wells were little changed from water year 1986. Hydrographs for representative observation wells in southeastern Wyoming are shown in figure 3. The location of all wells in the observation-well network and hydrographs of water levels are published in separate reports by the U.S. Geological Survey. The most recent water-level report contains data from 1978 through September 1987 and is available for inspection at the U.S. Geological Survey office in Cheyenne.

### SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 57 small sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

### EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1987 water year that began on October 1, 1986, and ended September 30, 1987. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface and ground water, and ground-water-level data. The locations of the stations and wells where the data were collected are shown in figure 1. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

### Station Identification Numbers

Each data station, whether streamsite or well, in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for wells and, in Wyoming, for surface-water stations where only infrequent measurements are made.

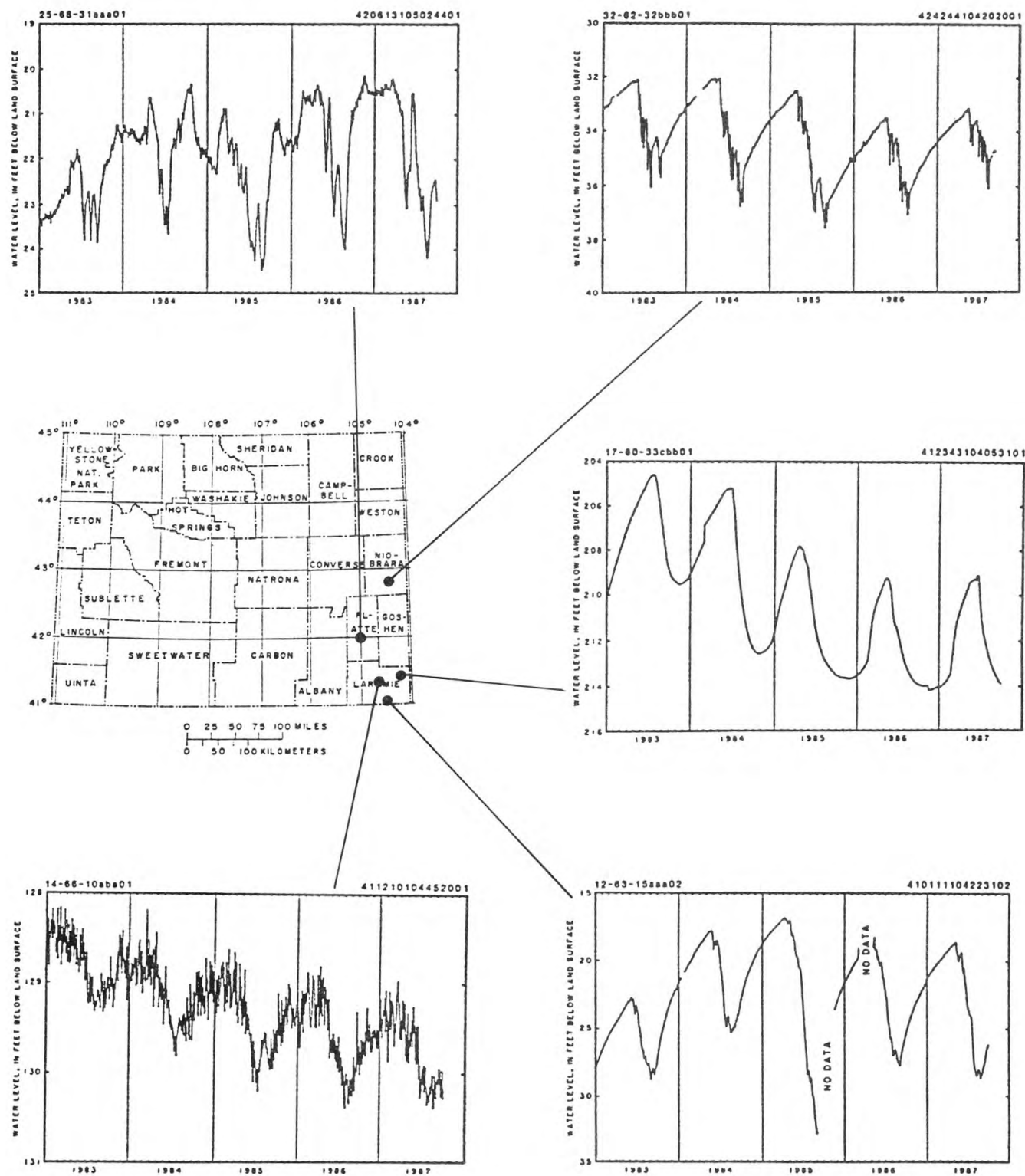


Figure 3.--Water-level hydrographs for observation wells located in areas of extensive ground-water withdrawals, January 1983 to September 1987.

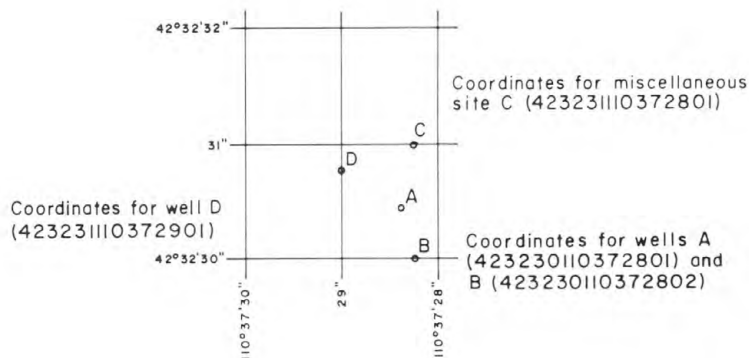
## Downstream Order System

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

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station, such as 06642000, which appears just to the left of the station name, includes the two-digit Part number "06" plus the six-digit downstream-order number "642000." The Part number designates the major river basin; for example, Part "06" is the Missouri River basin.

## Latitude-Longitude System

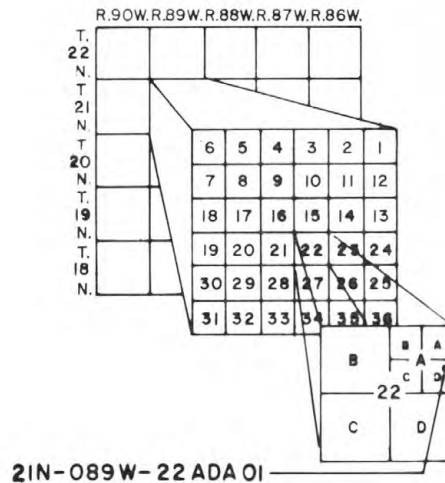
The identification numbers for wells and miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote the degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site-identification number, once assigned, is a pure number, and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description. (See figure below.)



System for numbering wells and miscellaneous sites  
(latitude and longitude).

In order to compare data for wells in other publications, such as the county ground-water studies, the wells in this report are also numbered according to a system based on the location in the public land classification of the U.S. Bureau of Land Management. The system is illustrated in the following figure. The first numeral denotes the township north of a base line, the second numeral denotes the range west of the fifth principal meridian, and the third numeral denotes the section in which the well is located. The letters A, B, C, and D designate, respectively, the northeast, northwest, southwest, and southeast quarter section, quarter-quarter section, and quarter-quarter-quarter section (10-acre or 4-hectare tract). For example, well 14-66-10aba01 is in the NE1/4 NW1/4 NE1/4 sec.10, T.14 N., R.66 W. Consecutive terminal numbers are added if more than one well is recorded within a 10-acre tract.

For a small irregularly-shaped area in west central Wyoming, the well or miscellaneous site numbers are based on the Wind River Meridian and Base Line system. The uppercase letter that begins the number designates the quadrant of the system. The quadrants are lettered A, B, C, and D in a counter-clockwise direction beginning with A in the northeast quadrant. Otherwise, the well numbers are the same as given in the preceding paragraph.



System for numbering wells and miscellaneous sites (township and range).

#### Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles. Records of miscellaneous discharge measurements or of measurements from special studies may be considered as partial records, but they are presented separately in this report. Location of all complete-record stations for which data are given in this report are shown in figure 1.

#### Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog records that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adapted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.



In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

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

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves, or tables defining the relationship of stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

For some gaging stations there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections. "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

#### Data Presentation

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

**LOCATION.--**Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

**DRAINAGE AREA.--**Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

**PERIOD OF RECORD.--**This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not, and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see glossary), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a remarks statement is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development.

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum stages and maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

EXTREMES FOR CURRENT YEAR.--Extremes given here are similar to those for the period of record, except the peak discharge listed may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District office to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

If applicable, data collected at partial-record stations follow the information for continuous-record sites. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

#### Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated," or by listing the dates of estimated record in the REMARKS paragraph of the station description.

#### Accuracy of the Records

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

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of their true value; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for daily values less than 1 ft<sup>3</sup>/s; to the nearest tenth between 1.0 and 10 ft<sup>3</sup>/s; to whole numbers between 10 and 1,000 ft<sup>3</sup>/s; and to 3 significant figures for more than 1,000 ft<sup>3</sup>/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

#### Other Records Available

Records of daily diversions of water from streams by canals are collected by and published in Hydrographers Annual Reports of the Wyoming Board of Control. Included are discharge records for streams and storage records for reservoirs not published in reports of the Geological Survey.

The National Water Data Exchange (NAWDEX), U.S. Geological Survey, Reston, VA 22092, maintains an index of records of discharge collected by other agencies but not published by the Geological Survey. Information on records at specific sites can be obtained from that office upon request.

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables are on file in the Wyoming District office. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the District office.



### Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

#### Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station, where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 1.

#### Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

#### On-site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed on pages 30 and 31 of this report. Also, detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey District office.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals, depends on flow conditions and other factors which must be evaluated by the collector.

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

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



### Water temperature

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

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

### Sediment

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

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

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

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

### Laboratory Measurements

Samples for suspended sediment, turbidity, indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey National Water Quality Laboratory in Arvada, Colorado or in the Wyoming Department of Agriculture laboratory in Laramie, Wyoming. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used for chemical and biological analyses are given in TWRI, Book 1, Chap. D2; Book 5, Chap. A1, A2, A3, A4, A5, and A6.

### Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

#### Remark Codes

The following remarks codes may appear with the water-quality data in this report:

| <u>PRINTED OUTPUT</u> | <u>REMARK</u>                                                                                  |
|-----------------------|------------------------------------------------------------------------------------------------|
| E                     | Estimated value                                                                                |
| >                     | Actual value is known to be greater than the value shown                                       |
| <                     | Actual value is known to be less than the value shown, which is the analytical detection limit |
| K                     | Results based on colony count outside the acceptable range (non-ideal colony count)            |
| L                     | Biological organism count less than 0.5 percent (organism may be observed rather than counted) |
| D                     | Biological organism count equal to or greater than 15 percent (dominant)                       |
| &                     | Biological organism estimated as dominant                                                      |

#### Records of Ground-Water levels

Only selected water-level data from Wyoming's network of observation wells are given in this report. These data are intended to provide a sampling and historical record of water-level changes in the more important aquifers. Locations of the observation wells in this network in Wyoming are shown in figure 1.

## Data Collection and Computation

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

Tables of water-level data are presented by counties arranged in alphabetical order. The prime identification number for a given well is the 15-digit number that appears to the upper left corner of the table. The secondary identification number is the local well number, an alphanumeric number, derived from the township-range location of the well.

Water-level records are obtained from direct measurements with a steel tape or from the graph or punched tape of a water-stage recorder. The water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

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

## Data Presentation

Each well record consists of two parts, the station description and the data table of water levels observed during the water year. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments to follow clarify information presented under the various headings.

LOCATION.--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds); a landline location designation; the hydrologic-unit number; the distance and direction from a geographic point of reference; and the owner's name.

AQUIFER.--This entry designates by name (if a name exists) and geologic age the aquifer(s) open to the well.

WELL CHARACTERISTICS.--This entry describes the well in terms of depth, diameter, casing depth and/or screened interval, method of construction, use, and additional information such as casing breaks, collapsed screen, and other changes since construction.

INSTRUMENTATION.--This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on weekly, monthly, or some other frequency of measurement.

DATUM.--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of collar, notch in top of casing, plug in pump base and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above (or below) National Geodetic Vertical Datum of 1929 (NGVD of 1929); it is reported with a precision depending on the method of determination.

REMARKS.--This entry describes factors that may influence the water level in a well or the measurement of the water level. It should identify wells that also are water-quality observation wells, and may be used to acknowledge the assistance of local (non-Survey) observers.

PERIOD OF RECORD.--This entry indicates the period for which there are published records for the well. It reports the month and year of the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year. Periods for which water-level records are available, but are not published by the Geological Survey, may be noted.

EXTREMES FOR PERIOD OF RECORD.--This entry contains the highest and lowest water levels of the period of published record, with respect to land-surface datum, and the dates of their occurrence.

A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum and all taped measurements of water level are listed. For wells equipped with recorders, only abbreviated tables are published; generally, only water-level lows are listed for every fifth day and at the end of the month (eom). The highest and lowest water levels of the water year and their dates of occurrence are shown on a line below the abbreviated table. Because all values are not published for wells with recorders, the extremes may be values that are not listed in the table. Missing records are indicated by dashes in place of water level.

#### Records of Ground-Water Quality

Records of ground-water quality in this report differ from other types of records in that for most sampling sites they consist of only one set of measurements for the water year. The quality of ground water ordinarily changes only slowly; therefore, for most general purposes one annual sampling, or only a few samples taken at infrequent intervals during the year, is sufficient. Frequent measurement of the same constituents is not necessary unless one is concerned with a particular problem, such as monitoring for trends in nitrate concentration. In the special cases where the quality of ground water may change more rapidly, more frequent measurements are made to identify the nature of the changes.

#### Data Collection and Computation

The records of ground-water quality in this report were obtained mostly as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some counties but none are presented for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality statewide. Such a view can be attained only by considering records for this year in context with similar records obtained for these and other counties in earlier years.

Most methods for collecting and analyzing water samples are described in the "U.S. Geological Survey Techniques of Water-Resources Investigations" manuals listed on a following page. The values reported in this report represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. All samples were obtained by trained personnel. The wells sampled were pumped long enough to assure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

#### Data Presentation

The records of ground-water quality are published in a section titled QUALITY OF GROUND WATER immediately following the ground-water-level records. Data for quality of ground water are listed alphabetically by County, and are identified by well number. The prime identification number for wells sampled is the 15-digit number derived from the latitude-longitude locations. No descriptive statements are given for ground-water-quality records; however, the well number, depth of well, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water. The REMARK codes listed for surface-water-quality records are also applicable to ground-water-quality records.

#### ACCESS TO WATSTORE DATA

The National WATER Data STORAGE and RETRIEVAL System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from each of the Water Resources Division's District offices (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist  
U.S. Geological Survey  
437 National Center  
Reston, Virginia 22092



## DEFINITION OF TERMS

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

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

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

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

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

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

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

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

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

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

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

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

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

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

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

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

Organic mass or volatile mass of the living substance is the difference between the dry mass and the ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash and dry mass.

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

Bottom material: See Bed material.

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

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

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

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

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

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

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

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

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

Cubic feet per second per square mile [(ft<sup>3</sup>/s)/mi<sup>2</sup>] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

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

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

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

Dissolved refers to that material in a representative water sample which passes through a 0.45 µm membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

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

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

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

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate ( $\text{CaCO}_3$ ).

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each groundwater observation well.

Measuring point (MP) is an arbitrary permanent reference point from which the distance to the water surface in a well is measured to obtain the water level.

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

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram ( $\mu\text{g/g}$ ) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

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

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

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

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per unit area habitat, usually square meter (m<sup>2</sup>), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

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

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

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

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

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

Particle-size classification used in this report agrees with the recommendation made by the American Geophysical Unit Subcommittee on Sediment Terminology. The classification is as follows:

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

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

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



Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

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

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

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

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

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

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

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

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

Milligrams of carbon per area or volume per unit time [ $\text{mg C}/(\text{m}^2 \cdot \text{time})$ ] for periphyton and macrophytes and [ $\text{mg C}/(\text{m}^3 \cdot \text{time})$ ] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [ $\text{mg O}/(\text{m}^2 \cdot \text{time})$ ] for periphyton and macrophytes and [ $\text{mg O}/(\text{m}^3 \cdot \text{time})$ ] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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

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

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

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

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

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

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

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

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

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft<sup>3</sup>/s) x 0.0027.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

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

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

7-day 10-year low flow ( $7 Q_{10}$ ) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

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

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

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

Substrate is the physical surface upon which an organism lives.

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

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

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

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

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

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

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

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

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

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

|              |                          |
|--------------|--------------------------|
| Kingdom..... | Animal                   |
| Phylum.....  | Arthropoda               |
| Class.....   | Insecta                  |
| Order.....   | Ephemeroptera            |
| Family.....  | Ephemeridae              |
| Genus.....   | <u>Hexagenia</u>         |
| Species..... | <u>Hexagenia limbata</u> |

Thermograph is an instrument that continuously records variation of temperature on a chart. The more general term "temperature recorder" is used in the table headings and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

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

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

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

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

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

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

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1987, is called the "1987 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976).

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

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



The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

- 1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
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- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. *Measurement of time of travel and dispersion in streams by dye tracing*, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.
- 3-A10. *Discharge ratings at gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A13. *Computation of continuous records of streamflow*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. *Use of flumes in measuring discharge*, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.

- 3-C1. *Fluvial sediment concepts* by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment* by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
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- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves* by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 4-B1. *Low-flow investigations* by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. *Regional analyses of streamflow characteristics* by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
- 4-D1. *Computation of rate and volume of stream depletion by wells* by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments* by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
- 5-A2. *Determination of minor elements in water by emission spectroscopy* by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. *Methods for analysis of organic substances in water* by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples* edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.
- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments* by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.
- 5-C1. *Laboratory theory and methods for sediment analysis* by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water* by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. *A model for simulation of flow in singular and interconnected channels* by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
- 8-A1. *Methods of measuring water levels in deep wells* by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers* by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

LOCATION.--Lat 44°37'13", long 110°51'44", Yellowstone National Park, Hydrologic Unit 10020007, on right bank 1.6 mi south of Madison Junction, 12 mi east of West Yellowstone, and at mile 1.8.

WATER-DISCHARGE RECORDS

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 598 ft<sup>3</sup>/s, Apr. 26, gage height, 3.96 ft; minimum, 236 ft<sup>3</sup>/s, Sept. 26, gage height, 2.93 ft.

| DAY         | OCT          | NOV   | DEC      | JAN      | FEB     | MAR          | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------------|--------------|-------|----------|----------|---------|--------------|-------|-------|-------|-------|-------|-------|
| 1           | 370          | 328   | 307      | 293      | 298     | 287          | 278   | 533   | 334   | 260   | 250   | 245   |
| 2           | 369          | 323   | 307      | 299      | 293     | 286          | 279   | 467   | 311   | 256   | 250   | 246   |
| 3           | 357          | 328   | 303      | 297      | 308     | 286          | 285   | 388   | 298   | 260   | 250   | 245   |
| 4           | 351          | 326   | 304      | 305      | 303     | 289          | 292   | 365   | 292   | 255   | 250   | 251   |
| 5           | 348          | 329   | 310      | 307      | 296     | 295          | 306   | 371   | 285   | 250   | 250   | 256   |
| 6           | 345          | 349   | 318      | 304      | 295     | 301          | 318   | 385   | 292   | 246   | 251   | 248   |
| 7           | 348          | 330   | 312      | 301      | 297     | 321          | 318   | 399   | 318   | 247   | 257   | 246   |
| 8           | 346          | 325   | 310      | 294      | 296     | 340          | 324   | 389   | 325   | 250   | 257   | 245   |
| 9           | 341          | 322   | 295      | 292      | 297     | 319          | 308   | 372   | 304   | 257   | 250   | 244   |
| 10          | 338          | 311   | 301      | 292      | 296     | 308          | 301   | 350   | 300   | 270   | 250   | 243   |
| 11          | 332          | 319   | 301      | 296      | 296     | 309          | 328   | 335   | 313   | 303   | 251   | 244   |
| 12          | 331          | 323   | 301      | 298      | 293     | 301          | 306   | 325   | 288   | 271   | 248   | 244   |
| 13          | 333          | 325   | 301      | 296      | 295     | 310          | 294   | 320   | 278   | 258   | 249   | 242   |
| 14          | 331          | 334   | 305      | 293      | 309     | 307          | 304   | 310   | 275   | 254   | 252   | 243   |
| 15          | 332          | 332   | 307      | 292      | 297     | 298          | 328   | 301   | 275   | 251   | 254   | 242   |
| 16          | 331          | 332   | 303      | 283      | 291     | 298          | 349   | 305   | 272   | 249   | 273   | 241   |
| 17          | 331          | 339   | 296      | 291      | 288     | 293          | 375   | 353   | 268   | 292   | 253   | 241   |
| 18          | 332          | 330   | 296      | 294      | 291     | 300          | 383   | 410   | 268   | 393   | 249   | 241   |
| 19          | 332          | 345   | 298      | 289      | 286     | 295          | 363   | 416   | 269   | 292   | 248   | 242   |
| 20          | 332          | 330   | 299      | 284      | 281     | 285          | 321   | 408   | 278   | 269   | 248   | 241   |
| 21          | 336          | 346   | 295      | 291      | 289     | 286          | 328   | 368   | 266   | 290   | 245   | 240   |
| 22          | 333          | 332   | 297      | 288      | 289     | 285          | 357   | 329   | 270   | 305   | 248   | 241   |
| 23          | 329          | 329   | 298      | 292      | 290     | 280          | 388   | 306   | 266   | 267   | 254   | 240   |
| 24          | 328          | 330   | 299      | 293      | 286     | 280          | 457   | 304   | 267   | 261   | 263   | 244   |
| 25          | 327          | 326   | 297      | 294      | 287     | 278          | 481   | 313   | 259   | 259   | 258   | 243   |
| 26          | 327          | 314   | 296      | 295      | 282     | 281          | 499   | 344   | 258   | 259   | 258   | 240   |
| 27          | 327          | 320   | 293      | 298      | 282     | 277          | 490   | 399   | 256   | 261   | 250   | 242   |
| 28          | 327          | 323   | 291      | 309      | 285     | 274          | 485   | 447   | 258   | 267   | 248   | 243   |
| 29          | 326          | 325   | 289      | 298      | ---     | 265          | 480   | 388   | 260   | 273   | 246   | 242   |
| 30          | 353          | 315   | 294      | 295      | ---     | 275          | 470   | 335   | 261   | 270   | 246   | 241   |
| 31          | 338          | ---   | 292      | 303      | ---     | 279          | ---   | 335   | ---   | 257   | 247   | ---   |
| TOTAL       | 10481        | 9840  | 9315     | 9156     | 8196    | 9088         | 10795 | 11370 | 8464  | 8352  | 7803  | 7306  |
| MEAN        | 338          | 328   | 300      | 295      | 293     | 293          | 360   | 367   | 282   | 269   | 252   | 244   |
| MAX         | 370          | 349   | 318      | 309      | 309     | 340          | 499   | 533   | 334   | 393   | 273   | 256   |
| MIN         | 326          | 311   | 289      | 283      | 281     | 265          | 278   | 301   | 256   | 246   | 245   | 240   |
| AC-FT       | 20790        | 19520 | 18480    | 18160    | 16260   | 18030        | 21410 | 22550 | 16790 | 16570 | 15480 | 14490 |
| CAL YR 1986 | TOTAL 146750 |       | MEAN 402 | MAX 1240 | MIN 277 | AC-FT 291100 |       |       |       |       |       |       |
| WTR YR 1987 | TOTAL 110166 |       | MEAN 302 | MAX 533  | MIN 240 | AC-FT 218500 |       |       |       |       |       |       |

06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: August 1983 to September 1986.

WATER TEMPERATURE: August 1983 to current year.

INSTRUMENTATION.--Water-quality monitor since Aug. 30, 1983.

REMARKS.--No temperature record Jan. 17 to Feb. 24, Sep. 9-12, 14, 18-30.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (water years 1983-86): Maximum, 560 microsiemens, Nov. 16, Mar. 21, 1986; minimum, 140 microsiemens, Jun. 5, 1986.

WATER TEMPERATURE: Maximum, 28.0°C, June 14, July 30, 31, 1987; minimum, 1.0°C, Dec. 24, 1983, Feb. 1, 1985.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 28.0°C, Jun. 14, July 30, 31; minimum observed, 4.5°C, Mar. 29.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>AIR<br>(DEG C) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|------------------------------------|--------------------------------------|
| OCT<br>08... | 1100 | 351                                             | 421                                               | 6.0                                | 14.0                                 |
| NOV<br>18... | 1030 | --                                              | 460                                               | -5.0                               | 9.0                                  |
| JAN<br>06... | 1145 | 312                                             | 474                                               | -5.0                               | 9.5                                  |
| FEB<br>18... | 1050 | --                                              | 494                                               | -18.0                              | 9.5                                  |
| APR<br>03... | 0835 | 283                                             | 498                                               | 2.0                                | 10.5                                 |
| MAY<br>19... | 0930 | --                                              | 368                                               | --                                 | --                                   |
| JUN<br>09... | 1330 | --                                              | 433                                               | --                                 | 20.5                                 |
| 30...        | 1145 | 256                                             | 499                                               | 19.0                               | 22.0                                 |
| AUG<br>18... | 1230 | 250                                             | 531                                               | 22.0                               | 19.0                                 |

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY     | MAX  | MIN  | MEAN     | MAX  | MIN  | MEAN     | MAX  | MIN  | MEAN    | MAX  | MIN  | MEAN |
|---------|------|------|----------|------|------|----------|------|------|---------|------|------|------|
| OCTOBER |      |      | NOVEMBER |      |      | DECEMBER |      |      | JANUARY |      |      |      |
| 1       | 15.5 | 13.5 | 14.5     | 14.0 | 10.5 | 12.0     | 10.0 | 7.5  | 8.5     | 9.5  | 6.5  | 8.0  |
| 2       | 14.0 | 13.0 | 13.5     | 14.0 | 10.0 | 12.0     | 10.0 | 7.0  | 8.5     | 11.0 | 9.0  | 10.0 |
| 3       | 16.5 | 12.0 | 14.0     | 15.0 | 11.0 | 12.5     | 10.0 | 7.0  | 8.5     | 10.5 | 8.5  | 9.5  |
| 4       | 14.5 | 12.5 | 13.5     | 14.0 | 11.0 | 12.5     | 10.5 | 7.5  | 9.0     | 11.5 | 10.5 | 11.0 |
| 5       | 18.0 | 14.0 | 15.5     | 13.0 | 11.5 | 12.5     | 12.5 | 10.0 | 11.5    | 11.5 | 9.5  | 10.5 |
| 6       | 18.5 | 13.0 | 16.0     | 12.0 | 9.0  | 10.5     | 12.5 | 10.5 | 12.0    | 10.5 | 9.0  | 9.5  |
| 7       | 18.0 | 13.5 | 16.0     | 11.5 | 8.5  | 9.5      | 11.5 | 9.5  | 10.5    | 9.5  | 8.0  | 9.0  |
| 8       | 17.5 | 13.5 | 15.5     | 10.0 | 8.5  | 9.0      | 10.5 | 8.0  | 9.5     | 8.5  | 6.5  | 7.5  |
| 9       | 17.0 | 13.0 | 15.0     | 9.5  | 7.5  | 8.5      | 8.0  | 5.5  | 6.5     | 8.0  | 6.0  | 7.0  |
| 10      | 15.0 | 10.5 | 13.0     | 8.5  | 5.5  | 7.0      | 8.5  | 5.5  | 7.0     | 8.0  | 5.0  | 6.5  |
| 11      | 13.5 | 9.0  | 11.5     | 8.0  | 7.5  | 8.0      | 8.0  | 6.0  | 7.0     | 10.0 | 6.5  | 8.0  |
| 12      | 15.0 | 9.5  | 12.0     | 9.5  | 7.0  | 8.0      | 8.5  | 6.0  | 7.5     | 11.0 | 8.0  | 9.5  |
| 13      | 15.5 | 10.5 | 13.0     | 11.5 | 7.5  | 9.5      | 9.5  | 6.5  | 8.0     | 10.0 | 8.0  | 9.0  |
| 14      | 15.5 | 11.0 | 13.5     | 12.0 | 11.0 | 11.5     | 10.5 | 8.5  | 9.5     | 8.0  | 5.5  | 7.0  |
| 15      | 16.5 | 11.0 | 14.0     | 11.5 | 10.0 | 10.5     | 11.5 | 9.5  | 10.5    | 7.5  | 5.0  | 6.0  |
| 16      | 16.0 | 11.5 | 14.0     | 10.5 | 8.5  | 9.5      | 10.5 | 8.0  | 9.0     | 7.0  | 3.0  | 5.0  |
| 17      | 15.5 | 11.5 | 14.0     | 10.0 | 9.0  | 9.5      | 9.0  | 7.0  | 8.0     | ---  | ---  | ---  |
| 18      | 15.0 | 13.0 | 14.0     | 12.0 | 8.0  | 10.0     | 8.5  | 6.0  | 7.5     | ---  | ---  | ---  |
| 19      | 16.5 | 13.0 | 14.5     | 11.5 | 10.0 | 10.5     | 9.0  | 6.5  | 7.5     | ---  | ---  | ---  |
| 20      | 16.5 | 13.0 | 15.0     | 12.0 | 9.5  | 11.0     | 11.0 | 9.0  | 10.0    | ---  | ---  | ---  |
| 21      | 18.0 | 15.0 | 16.0     | 12.0 | 10.5 | 11.5     | 9.0  | 7.0  | 8.5     | ---  | ---  | ---  |
| 22      | 16.5 | 13.0 | 15.0     | 11.0 | 8.5  | 10.0     | 10.0 | 7.5  | 9.0     | ---  | ---  | ---  |
| 23      | 16.5 | 11.5 | 14.0     | 10.0 | 9.0  | 9.5      | 11.0 | 9.5  | 10.0    | ---  | ---  | ---  |
| 24      | 16.5 | 12.5 | 14.5     | 11.5 | 10.0 | 10.5     | 11.0 | 8.5  | 9.5     | ---  | ---  | ---  |
| 25      | 16.5 | 12.5 | 14.5     | 11.5 | 9.0  | 10.5     | 10.5 | 8.5  | 10.0    | ---  | ---  | ---  |
| 26      | 16.0 | 12.5 | 14.5     | 10.0 | 7.0  | 9.0      | 9.0  | 7.5  | 8.5     | ---  | ---  | ---  |
| 27      | 15.5 | 13.0 | 14.0     | 11.5 | 8.5  | 10.0     | 8.5  | 7.0  | 8.0     | ---  | ---  | ---  |
| 28      | 15.0 | 12.0 | 13.5     | 11.0 | 10.0 | 10.5     | 8.5  | 6.0  | 7.5     | ---  | ---  | ---  |
| 29      | 15.0 | 12.0 | 13.5     | 12.5 | 10.5 | 11.5     | 9.0  | 6.0  | 7.5     | ---  | ---  | ---  |
| 30      | 14.0 | 11.0 | 13.0     | 10.5 | 8.5  | 9.5      | 9.5  | 7.0  | 8.5     | ---  | ---  | ---  |
| 31      | 14.0 | 10.5 | 12.0     | ---  | ---  | ---      | 9.0  | 6.5  | 7.5     | ---  | ---  | ---  |
| MONTH   | 18.5 | 9.0  | 14.1     | 15.0 | 5.5  | 10.2     | 12.5 | 5.5  | 8.73    | ---  | ---  | ---  |



## MADISON RIVER BASIN

06036905 FIREHOLE RIVER NEAR WEST YELLOWSTONE, MT--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY      | MAX  | MIN  | MEAN  | MAX  | MIN  | MEAN   | MAX  | MIN  | MEAN      | MAX  | MIN  | MEAN |
|----------|------|------|-------|------|------|--------|------|------|-----------|------|------|------|
| FEBRUARY |      |      | MARCH |      |      | APRIL  |      |      | MAY       |      |      |      |
| 1        | ---  | ---  | ---   | 10.5 | 8.0  | 9.0    | 16.5 | 11.0 | 13.5      | 15.5 | 11.0 | 13.5 |
| 2        | ---  | ---  | ---   | 13.5 | 9.0  | 11.0   | 18.0 | 9.0  | 13.5      | 14.0 | 11.5 | 13.0 |
| 3        | ---  | ---  | ---   | 14.0 | 9.5  | 12.0   | 18.5 | 10.0 | 14.0      | 18.5 | 10.0 | 14.0 |
| 4        | ---  | ---  | ---   | 16.0 | 10.0 | 13.0   | 19.5 | 11.0 | 15.5      | 20.5 | 12.5 | 16.5 |
| 5        | ---  | ---  | ---   | 15.0 | 10.5 | 13.0   | 20.0 | 12.0 | 16.0      | 21.0 | 13.5 | 17.5 |
| 6        | ---  | ---  | ---   | 14.0 | 12.0 | 13.0   | 17.5 | 13.0 | 15.5      | 21.0 | 13.5 | 17.5 |
| 7        | ---  | ---  | ---   | 15.5 | 13.5 | 14.0   | 18.0 | 12.0 | 15.0      | 20.5 | 14.0 | 17.5 |
| 8        | ---  | ---  | ---   | 13.0 | 9.5  | 11.0   | 14.5 | 11.0 | 13.0      | 21.0 | 14.5 | 18.0 |
| 9        | ---  | ---  | ---   | 14.5 | 10.5 | 12.0   | 14.5 | 9.0  | 11.5      | 19.5 | 15.5 | 18.0 |
| 10       | ---  | ---  | ---   | 15.5 | 11.0 | 13.0   | 17.0 | 10.5 | 13.5      | 21.0 | 15.5 | 18.0 |
| 11       | ---  | ---  | ---   | 14.5 | 12.0 | 13.0   | 14.5 | 11.5 | 13.0      | 21.0 | 15.5 | 18.5 |
| 12       | ---  | ---  | ---   | 14.0 | 11.5 | 13.0   | 16.5 | 9.0  | 12.5      | 21.5 | 15.5 | 19.0 |
| 13       | ---  | ---  | ---   | 15.5 | 12.0 | 13.5   | 18.5 | 10.0 | 14.0      | 21.5 | 17.0 | 19.0 |
| 14       | ---  | ---  | ---   | 14.0 | 11.0 | 12.5   | 18.5 | 11.5 | 15.0      | 23.5 | 16.0 | 20.0 |
| 15       | ---  | ---  | ---   | 15.5 | 9.5  | 12.5   | 17.5 | 12.0 | 15.0      | 23.5 | 16.5 | 20.5 |
| 16       | ---  | ---  | ---   | 14.5 | 12.0 | 13.5   | 17.0 | 12.0 | 14.5      | 20.0 | 19.0 | 19.5 |
| 17       | ---  | ---  | ---   | 16.0 | 11.0 | 13.5   | 17.5 | 11.5 | 14.5      | 18.5 | 16.5 | 17.5 |
| 18       | ---  | ---  | ---   | 14.5 | 12.0 | 13.0   | 16.5 | 11.0 | 14.5      | 17.0 | 15.5 | 16.5 |
| 19       | ---  | ---  | ---   | 13.0 | 10.0 | 11.5   | 15.5 | 10.0 | 12.0      | 17.0 | 14.5 | 16.0 |
| 20       | ---  | ---  | ---   | 14.0 | 8.0  | 11.0   | 17.5 | 8.5  | 12.5      | 16.0 | 14.5 | 15.5 |
| 21       | ---  | ---  | ---   | 13.5 | 9.5  | 11.5   | 19.0 | 10.5 | 15.0      | 18.5 | 13.0 | 15.5 |
| 22       | ---  | ---  | ---   | 14.0 | 8.5  | 11.0   | 19.0 | 11.5 | 15.5      | 20.5 | 14.5 | 17.5 |
| 23       | ---  | ---  | ---   | 14.0 | 8.0  | 11.0   | 17.5 | 11.5 | 15.0      | 21.0 | 14.5 | 18.0 |
| 24       | 10.5 | 7.5  | 8.5   | 14.0 | 9.5  | 11.5   | 17.5 | 9.5  | 14.5      | 18.5 | 15.0 | 17.0 |
| 25       | 10.5 | 7.0  | 8.5   | 16.0 | 7.5  | 11.5   | 18.0 | 9.5  | 14.0      | 20.5 | 15.0 | 17.5 |
| 26       | 11.5 | 6.5  | 9.0   | 12.0 | 9.0  | 11.0   | 18.0 | 9.5  | 14.0      | 19.0 | 16.0 | 17.0 |
| 27       | 11.5 | 6.0  | 9.0   | 14.0 | 8.5  | 10.5   | 18.5 | 10.0 | 14.5      | 16.0 | 14.5 | 15.0 |
| 28       | 12.0 | 8.0  | 10.0  | 12.5 | 6.5  | 10.0   | 18.0 | 11.5 | 15.5      | 17.5 | 13.0 | 15.0 |
| 29       | ---  | ---  | ---   | 13.0 | 4.5  | 9.0    | 18.5 | 12.5 | 16.0      | 19.5 | 14.5 | 16.5 |
| 30       | ---  | ---  | ---   | 16.0 | 7.0  | 11.5   | 16.5 | 12.5 | 15.0      | 19.5 | 15.0 | 17.5 |
| 31       | ---  | ---  | ---   | 18.0 | 10.0 | 14.0   | ---  | ---  | ---       | 17.5 | 15.5 | 16.5 |
| MONTH    | ---  | ---  | ---   | 18.0 | 4.5  | 12.0   | 20.0 | 8.5  | 14.2      | 23.5 | 10.0 | 17.0 |
| JUNE     |      |      | JULY  |      |      | AUGUST |      |      | SEPTEMBER |      |      |      |
| 1        | 16.0 | 13.0 | 14.5  | 26.5 | 19.0 | 23.0   | 25.5 | 19.0 | 22.5      | 25.0 | 18.0 | 21.5 |
| 2        | 19.5 | 11.5 | 15.5  | 25.5 | 20.5 | 23.0   | 25.0 | 18.0 | 22.0      | 23.5 | 18.5 | 21.0 |
| 3        | 23.0 | 13.5 | 18.5  | 25.0 | 19.0 | 22.0   | 25.0 | 18.5 | 22.0      | 20.0 | 18.0 | 19.0 |
| 4        | 24.5 | 15.5 | 20.0  | 24.0 | 18.5 | 22.0   | 25.5 | 17.5 | 22.0      | 19.0 | 16.5 | 18.0 |
| 5        | 24.5 | 17.5 | 21.0  | 25.0 | 19.0 | 22.0   | 24.5 | 18.5 | 22.0      | 21.0 | 16.0 | 18.5 |
| 6        | 22.0 | 18.0 | 20.0  | 25.0 | 18.5 | 21.5   | 25.5 | 18.5 | 22.0      | 22.0 | 15.5 | 19.0 |
| 7        | 21.0 | 18.0 | 19.5  | 23.0 | 17.5 | 21.0   | 22.0 | 19.5 | 21.0      | 23.0 | 17.5 | 20.0 |
| 8        | 24.0 | 17.5 | 20.5  | 21.5 | 19.0 | 20.5   | 26.0 | 17.0 | 21.0      | 22.5 | 17.0 | 20.0 |
| 9        | 21.5 | 18.5 | 20.0  | 24.0 | 19.5 | 21.5   | 26.5 | 18.5 | 22.5      | ---  | ---  | ---  |
| 10       | 21.5 | 18.5 | 20.0  | 20.5 | 18.5 | 19.5   | 25.0 | 19.0 | 22.0      | ---  | ---  | ---  |
| 11       | 24.5 | 17.0 | 20.5  | 22.5 | 16.5 | 19.0   | 24.0 | 19.0 | 21.5      | ---  | ---  | ---  |
| 12       | 25.0 | 18.0 | 21.5  | 25.0 | 16.5 | 20.5   | 24.5 | 16.5 | 21.0      | ---  | ---  | ---  |
| 13       | 27.0 | 19.0 | 23.0  | 25.5 | 18.0 | 21.5   | 21.0 | 18.0 | 20.0      | 20.0 | 16.0 | 18.5 |
| 14       | 28.0 | 19.0 | 23.5  | 27.5 | 18.0 | 22.5   | 22.5 | 17.5 | 20.0      | ---  | ---  | ---  |
| 15       | 24.5 | 19.5 | 22.0  | 26.5 | 19.0 | 23.0   | 20.0 | 18.5 | 19.5      | 22.5 | ---  | ---  |
| 16       | 23.0 | 17.0 | 20.0  | 24.0 | 20.5 | 22.5   | 20.5 | 16.0 | 18.5      | 27.5 | 16.0 | 18.0 |
| 17       | 22.0 | 16.5 | 20.0  | 21.5 | 19.5 | 20.5   | ---  | ---  | ---       | 19.0 | ---  | ---  |
| 18       | 23.0 | 17.0 | 20.0  | 20.0 | 16.5 | 18.5   | ---  | ---  | ---       | ---  | ---  | ---  |
| 19       | 20.5 | 17.0 | 18.5  | 21.5 | 15.5 | 19.0   | 22.5 | 16.0 | 20.0      | ---  | ---  | ---  |
| 20       | 24.5 | 16.5 | 20.0  | 23.5 | 16.5 | 20.0   | 24.0 | 18.5 | 21.0      | ---  | ---  | ---  |
| 21       | 24.5 | 17.5 | 21.0  | 21.5 | 19.5 | 20.5   | 21.5 | 18.0 | 20.0      | ---  | ---  | ---  |
| 22       | 21.0 | 18.5 | 20.0  | 24.0 | 17.5 | 20.5   | 24.5 | 17.5 | 21.0      | ---  | ---  | ---  |
| 23       | 22.5 | 16.0 | 19.0  | 25.5 | 17.5 | 21.5   | 25.0 | 19.0 | 22.0      | ---  | ---  | ---  |
| 24       | 24.5 | 16.5 | 20.0  | 26.5 | 18.5 | 23.0   | 21.5 | 18.5 | 20.0      | ---  | ---  | ---  |
| 25       | 25.0 | 17.0 | 21.0  | 25.5 | 19.5 | 22.5   | 21.5 | 18.5 | 20.0      | ---  | ---  | ---  |
| 26       | 26.5 | 17.5 | 22.0  | 27.0 | 20.0 | 23.5   | 22.5 | 16.5 | 19.5      | ---  | ---  | ---  |
| 27       | 26.0 | 18.5 | 22.5  | 25.5 | 21.5 | 24.0   | 23.0 | ---  | ---       | ---  | ---  | ---  |
| 28       | 24.5 | 19.0 | 22.0  | 25.0 | 21.0 | 23.5   | 23.5 | 17.5 | 21.0      | ---  | ---  | ---  |
| 29       | 25.5 | 18.0 | 22.0  | 24.5 | 21.0 | 22.5   | 24.5 | 17.0 | 20.5      | ---  | ---  | ---  |
| 30       | 24.5 | 19.5 | 22.5  | 28.0 | 20.5 | 24.0   | 24.5 | 18.0 | 21.5      | ---  | ---  | ---  |
| 31       | ---  | ---  | ---   | 28.0 | 21.0 | 24.5   | 25.0 | 18.0 | 21.5      | ---  | ---  | ---  |
| MONTH    | 28.0 | 11.5 | 20.3  | 28.0 | 15.5 | 21.7   | ---  | ---  | ---       | ---  | ---  | ---  |

## 06037000 GIBBON RIVER NEAR WEST YELLOWSTONE, MT

LOCATION.--Lat 44°38'58", long 110°47'02", Yellowstone National Park, Hydrologic Unit 10020007, on right bank, 0.6 mi downstream from Canyon Creek, 4.0 mi east of Madison Junction, 16.7 mi east of West Yellowstone, and at mile 5.6.

DRAINAGE AREA.--118 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1913 to September 1916 (incomplete record most years), October 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,940 ft, from topographic map. Nonrecording gage at site 0.1 mi downstream at different datum, 1913-1916.

REMARKS.--Estimated daily discharges: Nov. 10, Dec. 9-11, 18, 28, 29, Jan. 9, 10, 15-17, 20-22. Water-discharge records fair. No regulation or diversions upstream of station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 809 ft<sup>3</sup>/s, May 30, 1986, gage height, 4.53 ft; minimum, 56 ft<sup>3</sup>/s, Mar. 29, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 207 ft<sup>3</sup>/s, July 18, gage height, 3.03 ft; minimum, 56 ft<sup>3</sup>/s, Mar. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1     | 99   | 93   | 86   | 83   | 82   | 73   | 69   | 159  | 139  | 85   | 79   | 72   |
| 2     | 99   | 91   | 86   | 87   | 80   | 73   | 69   | 155  | 123  | 84   | 78   | 72   |
| 3     | 97   | 92   | 85   | 86   | 83   | 73   | 71   | 137  | 113  | 84   | 75   | 72   |
| 4     | 94   | 92   | 84   | 89   | 80   | 74   | 74   | 126  | 109  | 84   | 73   | 75   |
| 5     | 93   | 91   | 90   | 93   | 79   | 76   | 77   | 120  | 105  | 81   | 75   | 78   |
| 6     | 92   | 102  | 92   | 91   | 79   | 76   | 84   | 114  | 104  | 78   | 75   | 75   |
| 7     | 91   | 97   | 91   | 88   | 80   | 79   | 87   | 112  | 120  | 78   | 73   | 75   |
| 8     | 91   | 97   | 89   | 81   | 77   | 89   | 88   | 111  | 139  | 78   | 77   | 73   |
| 9     | 91   | 97   | e79  | e80  | 78   | 84   | 85   | 109  | 112  | 84   | 74   | 72   |
| 10    | 91   | e90  | e81  | e81  | 78   | 82   | 80   | 106  | 112  | 95   | 73   | 73   |
| 11    | 89   | 99   | e83  | 82   | 78   | 82   | 86   | 103  | 106  | 125  | 74   | 73   |
| 12    | 89   | 97   | 85   | 84   | 77   | 80   | 80   | 100  | 98   | 103  | 74   | 71   |
| 13    | 90   | 97   | 84   | 84   | 78   | 80   | 76   | 100  | 93   | 88   | 72   | 70   |
| 14    | 90   | 101  | 86   | 82   | 82   | 81   | 80   | 97   | 91   | 83   | 74   | 70   |
| 15    | 89   | 103  | 86   | e80  | 77   | 78   | 91   | 93   | 89   | 81   | 75   | 70   |
| 16    | 90   | 99   | 86   | e74  | 75   | 79   | 106  | 95   | 93   | 78   | 85   | 69   |
| 17    | 89   | 100  | 82   | e76  | 76   | 76   | 119  | 119  | 91   | 95   | 78   | 69   |
| 18    | 90   | 98   | e80  | 79   | 76   | 76   | 129  | 161  | 91   | 177  | 74   | 71   |
| 19    | 91   | 101  | 82   | 79   | 74   | 76   | 120  | 149  | 90   | 123  | 73   | 72   |
| 20    | 91   | 97   | 84   | e78  | 71   | 71   | 101  | 142  | 104  | 99   | 73   | 71   |
| 21    | 96   | 99   | 84   | e78  | 75   | 73   | 109  | 135  | 93   | 103  | 69   | 71   |
| 22    | 91   | 98   | 84   | e78  | 75   | 71   | 127  | 118  | 91   | 115  | 70   | 71   |
| 23    | 89   | 97   | 84   | 79   | 75   | 70   | 131  | 107  | 94   | 94   | 72   | 71   |
| 24    | 90   | 97   | 84   | 80   | 73   | 71   | 145  | 104  | 92   | 86   | 80   | 71   |
| 25    | 90   | 96   | 84   | 79   | 72   | 70   | 150  | 103  | 84   | 82   | 80   | 71   |
| 26    | 90   | 89   | 84   | 79   | 71   | 71   | 152  | 113  | 83   | 80   | 80   | 71   |
| 27    | 91   | 95   | 81   | 80   | 71   | 70   | 148  | 146  | 79   | 81   | 75   | 70   |
| 28    | 93   | 94   | e80  | 84   | 73   | 68   | 149  | 172  | 78   | 83   | 73   | 70   |
| 29    | 91   | 94   | e82  | 80   | ---  | 62   | 145  | 156  | 80   | 83   | 73   | 69   |
| 30    | 95   | 91   | 83   | 78   | ---  | 68   | 146  | 135  | 85   | 84   | 72   | 70   |
| 31    | 95   | ---  | 84   | 84   | ---  | 70   | ---  | 129  | ---  | 81   | 72   | ---  |
| TOTAL | 2847 | 2884 | 2615 | 2536 | 2145 | 2322 | 3174 | 3826 | 2981 | 2855 | 2320 | 2148 |
| MEAN  | 91.8 | 96.1 | 84.4 | 81.8 | 76.6 | 74.9 | 106  | 123  | 99.4 | 92.1 | 74.8 | 71.6 |
| MAX   | 99   | 103  | 92   | 93   | 83   | 89   | 152  | 172  | 139  | 177  | 85   | 78   |
| MIN   | 89   | 89   | 79   | 74   | 71   | 62   | 69   | 93   | 78   | 78   | 69   | 69   |
| AC-FT | 5650 | 5720 | 5190 | 5030 | 4250 | 4610 | 6300 | 7590 | 5910 | 5660 | 4600 | 4260 |

CAL YR 1986 TOTAL 49565 MEAN 136 MAX 673 MIN 66 AC-FT 98310  
WTR YR 1987 TOTAL 32653 MEAN 89.5 MAX 177 MIN 62 AC-FT 64770

e Estimated

06037000 GIBBON RIVER NEAR WEST YELLOWSTONE, MT--Continued

## WATER QUALITY DATA

PERIOD OF RECORD.--Water years 1983 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: September 1983 to September 1986.

WATER TEMPERATURE: August 1983 to current year.

INSTRUMENTATION.--Water-quality monitor since Aug. 31, 1983.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (water years 1983-86): Maximum, 538 microsiemens, Sep. 9, 1985; minimum, 77 microsiemens, May 30, 1986.

WATER TEMPERATURE: Maximum, 24.5°C, July 30, 1987; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 24.5°C, July 30; minimum, 0.0°C on many days during winter period.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>AIR<br>(DEG C) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) |
|-------|------|-------------------------------------------------|---------------------------------------------------|------------------------------------|--------------------------------------|
| OCT   |      |                                                 |                                                   |                                    |                                      |
| 08... | 0900 | 92                                              | 332                                               | 1.0                                | 9.0                                  |
| NOV   |      |                                                 |                                                   |                                    |                                      |
| 18... | 0900 | 95                                              | 376                                               | -3.5                               | 3.5                                  |
| JAN   |      |                                                 |                                                   |                                    |                                      |
| 06... | 1045 | 91                                              | 419                                               | -5.0                               | 4.0                                  |
| FEB   |      |                                                 |                                                   |                                    |                                      |
| 18... | 0910 | 75                                              | 436                                               | -18.0                              | 3.5                                  |
| APR   |      |                                                 |                                                   |                                    |                                      |
| 02... | 1530 | 69                                              | 447                                               | 12.0                               | 13.0                                 |
| MAY   |      |                                                 |                                                   |                                    |                                      |
| 19... | 0800 | 161                                             | 322                                               | 10.0                               | 11.5                                 |
| JUN   |      |                                                 |                                                   |                                    |                                      |
| 09... | 1140 | --                                              | 293                                               | --                                 | 16.5                                 |
| 30... | 0920 | 82                                              | 384                                               | 12.0                               | 15.0                                 |
| AUG   |      |                                                 |                                                   |                                    |                                      |
| 18... | 1040 | 76                                              | 363                                               | 15.0                               | 11.0                                 |

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY     | MAX  | MIN  | MEAN     | MAX | MIN | MEAN     | MAX | MIN | MEAN    | MAX | MIN | MEAN |
|---------|------|------|----------|-----|-----|----------|-----|-----|---------|-----|-----|------|
| OCTOBER |      |      | NOVEMBER |     |     | DECEMBER |     |     | JANUARY |     |     |      |
| 1       | 11.0 | 9.5  | 10.0     | 9.0 | 5.0 | 7.0      | 4.0 | 1.5 | 2.5     | 3.5 | .0  | 2.0  |
| 2       | 11.0 | 8.5  | 9.5      | 8.5 | 5.0 | 6.5      | 4.0 | .5  | 2.5     | 5.0 | 3.0 | 4.5  |
| 3       | 12.0 | 7.5  | 9.5      | 9.5 | 6.0 | 7.5      | 3.5 | .0  | 1.5     | 5.0 | 3.0 | 4.0  |
| 4       | 10.0 | 8.5  | 9.5      | 9.0 | 5.5 | 7.5      | 4.0 | 1.0 | 2.5     | 6.0 | 5.0 | 5.5  |
| 5       | 13.5 | 9.5  | 11.0     | 8.0 | 6.5 | 7.5      | 7.0 | 4.0 | 5.5     | 6.0 | 4.5 | 5.0  |
| 6       | 14.0 | 9.0  | 11.5     | 6.5 | 4.0 | 4.5      | 7.5 | 5.0 | 6.5     | 5.0 | 3.5 | 4.5  |
| 7       | 14.0 | 9.0  | 11.5     | 5.5 | 2.5 | 4.0      | 5.5 | 4.0 | 5.0     | 3.5 | 1.5 | 3.0  |
| 8       | 13.0 | 9.0  | 11.0     | 4.5 | 3.0 | 4.0      | 5.0 | 2.0 | 4.0     | 2.5 | 1.0 | 1.5  |
| 9       | 13.0 | 8.0  | 10.5     | 4.0 | 1.5 | 3.0      | 1.5 | .0  | .5      | 1.5 | .0  | .5   |
| 10      | 10.5 | 6.5  | 8.5      | 2.0 | .0  | 1.0      | 2.5 | .0  | 1.0     | 1.5 | .0  | .5   |
| 11      | 9.0  | 4.5  | 6.5      | 3.0 | 2.0 | 2.5      | 2.0 | .0  | 1.0     | 4.0 | 1.0 | 2.0  |
| 12      | 10.0 | 4.5  | 7.0      | 4.0 | .5  | 2.0      | 2.5 | .0  | 1.0     | 5.0 | 1.5 | 3.0  |
| 13      | 10.5 | 5.5  | 8.0      | 6.0 | 2.0 | 4.0      | 3.5 | .5  | 2.0     | 4.5 | 2.5 | 4.0  |
| 14      | 10.5 | 6.0  | 8.5      | 7.0 | 6.0 | 6.5      | 4.5 | 2.5 | 4.0     | 2.5 | .0  | 1.5  |
| 15      | 11.5 | 6.0  | 8.5      | 6.5 | 5.5 | 6.0      | 5.5 | 3.5 | 4.5     | 1.5 | .0  | .5   |
| 16      | 11.0 | 6.5  | 8.5      | 5.5 | 5.0 | 5.0      | 4.0 | 2.0 | 3.0     | .0  | .0  | .0   |
| 17      | 11.0 | 6.5  | 8.5      | 5.5 | 3.5 | 5.0      | 2.5 | .0  | 1.5     | 2.5 | .0  | .5   |
| 18      | 10.5 | 7.5  | 9.0      | 6.5 | 3.0 | 5.0      | 2.0 | .0  | 1.0     | 3.5 | 2.0 | 2.5  |
| 19      | 11.0 | 7.5  | 9.5      | 6.5 | 5.0 | 5.5      | 3.5 | .0  | 1.5     | 3.0 | .5  | 1.5  |
| 20      | 11.5 | 8.0  | 9.5      | 6.5 | 4.0 | 5.5      | 5.5 | 3.0 | 4.5     | 1.0 | .0  | .0   |
| 21      | 13.0 | 10.5 | 11.5     | 7.0 | 6.0 | 6.5      | 4.0 | 2.0 | 3.0     | 2.5 | .0  | 1.0  |
| 22      | 11.5 | 7.5  | 9.5      | 5.5 | 3.5 | 4.5      | 4.5 | 1.5 | 3.0     | 3.0 | .0  | 1.5  |
| 23      | 11.5 | 7.0  | 9.0      | 4.5 | 4.0 | 4.5      | 5.5 | 4.0 | 4.5     | 5.0 | 1.0 | 3.0  |
| 24      | 11.5 | 7.0  | 9.0      | 6.5 | 4.5 | 5.5      | 5.5 | 4.5 | 5.0     | 4.5 | 3.0 | 4.0  |
| 25      | 11.5 | 7.5  | 9.5      | 6.0 | 3.5 | 5.0      | 5.0 | 3.0 | 4.5     | 5.0 | 3.0 | 4.5  |
| 26      | 11.0 | 7.0  | 9.5      | 4.5 | 1.0 | 3.0      | 4.0 | 2.0 | 3.0     | 5.5 | 5.0 | 5.5  |
| 27      | 11.0 | 8.0  | 9.5      | 5.5 | 3.0 | 4.5      | 3.0 | .5  | 1.5     | 8.0 | 5.5 | 6.0  |
| 28      | 10.5 | 7.0  | 8.5      | 6.0 | 4.5 | 5.5      | 2.5 | .0  | 1.0     | 6.5 | 4.0 | 5.5  |
| 29      | 10.5 | 7.0  | 8.5      | 7.0 | 5.5 | 6.0      | 3.5 | .0  | 1.5     | 5.5 | 3.5 | 4.0  |
| 30      | 9.5  | 7.0  | 8.5      | 5.0 | 2.5 | 4.0      | 4.0 | 2.5 | 3.5     | 5.0 | 1.0 | 3.0  |
| 31      | 9.5  | 6.0  | 7.5      | --- | --- | ---      | 3.5 | 1.0 | 2.0     | 5.5 | 4.5 | 5.0  |
| MONTH   | 14.0 | 4.5  | 10.0     | 9.5 | .0  | 4.95     | 7.5 | .0  | 2.84    | 8.0 | .0  | 2.89 |

06037000 GIBBON RIVER NEAR WEST YELLOWSTONE, MT--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY   | MAX      | MIN  | MEAN    | MAX   | MIN  | MEAN | MAX    | MIN  | MEAN | MAX       | MIN  | MEAN |
|-------|----------|------|---------|-------|------|------|--------|------|------|-----------|------|------|
|       | FEBRUARY |      |         | MARCH |      |      | APRIL  |      |      | MAY       |      |      |
| 1     | 5.0      | 4.0  | 5.0     | 6.5   | 4.5  | 5.0  | 12.5   | 6.0  | 8.5  | 13.5      | 9.0  | 11.5 |
| 2     | 5.5      | 3.0  | 4.5     | 8.5   | 4.0  | 6.0  | 13.0   | 4.0  | 8.5  | 12.0      | 9.5  | 10.5 |
| 3     | 7.5      | 5.5  | 6.5     | 9.5   | 5.0  | 7.0  | 14.0   | 4.5  | 9.0  | 15.5      | 7.0  | 11.0 |
| 4     | 6.5      | 3.5  | 5.0     | 10.5  | 5.0  | 7.5  | 15.0   | 6.0  | 10.0 | 17.5      | 9.0  | 13.0 |
| 5     | 6.5      | 3.0  | 4.5     | 10.5  | 5.5  | 8.0  | 14.5   | 7.0  | 10.5 | 18.0      | 10.5 | 14.5 |
| 6     | 6.5      | 2.0  | 4.5     | 9.0   | 7.0  | 8.0  | 14.5   | 9.0  | 11.5 | 19.0      | 11.0 | 15.0 |
| 7     | 6.5      | 2.0  | 4.5     | 10.5  | 8.5  | 9.0  | 12.5   | 7.5  | 10.0 | 19.5      | 11.0 | 15.0 |
| 8     | 7.0      | 2.0  | 4.5     | 8.5   | 5.5  | 7.0  | 9.0    | 6.5  | 8.0  | 18.5      | 11.5 | 15.0 |
| 9     | 7.0      | 3.0  | 5.0     | 10.0  | 5.5  | 7.0  | 10.0   | 4.5  | 7.0  | 17.5      | 12.5 | 15.0 |
| 10    | 7.5      | 4.0  | 6.0     | 9.5   | 6.5  | 8.0  | 12.5   | 5.0  | 8.5  | 18.0      | 12.0 | 15.0 |
| 11    | 9.0      | 4.5  | 6.5     | 9.0   | 7.5  | 8.0  | 10.0   | 7.0  | 8.5  | 18.0      | 12.5 | 15.0 |
| 12    | 8.5      | 4.0  | 6.5     | 8.5   | 6.5  | 7.5  | 10.5   | 5.5  | 8.0  | 19.0      | 12.0 | 15.5 |
| 13    | 8.0      | 6.5  | 7.5     | 10.0  | 7.0  | 8.5  | 14.0   | 5.5  | 9.0  | 18.5      | 13.0 | 15.5 |
| 14    | 8.5      | 6.5  | 7.0     | 9.0   | 6.5  | 7.5  | 14.5   | 7.0  | 10.5 | 21.0      | 12.0 | 16.0 |
| 15    | 7.5      | 4.0  | 6.0     | 10.5  | 4.5  | 7.0  | 13.5   | 8.0  | 10.5 | 20.0      | 13.0 | 16.5 |
| 16    | 7.5      | 3.0  | 5.0     | 9.5   | 7.0  | 8.0  | 13.0   | 8.0  | 10.5 | 17.0      | 15.0 | 16.0 |
| 17    | 6.5      | 4.0  | 5.0     | 11.0  | 6.0  | 8.5  | 14.5   | 7.5  | 10.5 | 15.0      | 13.0 | 13.5 |
| 18    | 8.0      | 3.5  | 5.0     | 9.0   | 6.5  | 8.0  | 11.5   | 7.0  | 9.5  | 13.0      | 11.5 | 12.5 |
| 19    | 5.5      | 2.0  | 3.5     | 7.5   | 5.0  | 6.0  | 9.5    | 6.0  | 7.5  | 14.0      | 11.5 | 12.5 |
| 20    | 5.0      | .0   | 2.5     | 9.0   | 2.5  | 5.5  | 13.5   | 4.5  | 8.0  | 12.5      | 11.0 | 12.0 |
| 21    | 7.0      | 2.5  | 4.5     | 8.0   | 4.0  | 6.0  | 15.0   | 6.5  | 10.5 | 12.5      | 9.0  | 10.5 |
| 22    | 5.5      | 3.5  | 4.5     | 8.0   | 3.0  | 5.5  | 15.0   | 7.5  | 11.0 | 16.0      | 10.0 | 12.5 |
| 23    | 6.0      | 3.5  | 4.5     | 9.5   | 3.0  | 6.0  | 13.5   | 7.5  | 11.0 | 16.0      | 10.0 | 13.0 |
| 24    | 4.5      | 2.0  | 3.0     | 9.0   | 4.0  | 6.5  | 14.5   | 7.5  | 11.0 | 14.0      | 10.5 | 12.5 |
| 25    | 5.0      | 1.0  | 3.0     | 11.0  | 3.0  | 6.5  | 14.5   | 7.5  | 11.0 | 16.5      | 11.0 | 13.5 |
| 26    | 6.0      | .0   | 2.5     | 8.5   | 5.5  | 6.5  | 15.5   | 8.0  | 12.0 | 16.0      | 12.0 | 13.5 |
| 27    | 6.0      | .0   | 3.0     | 9.0   | 3.5  | 6.0  | 16.0   | 8.5  | 12.0 | 12.5      | 10.5 | 11.0 |
| 28    | 7.0      | 3.0  | 4.5     | 7.5   | 1.5  | 5.0  | 15.5   | 9.0  | 12.0 | 13.0      | 10.0 | 11.0 |
| 29    | ---      | ---  | ---     | 8.5   | .0   | 3.5  | 14.5   | 9.5  | 12.5 | 16.5      | 10.5 | 13.0 |
| 30    | ---      | ---  | ---     | 10.5  | 2.5  | 6.0  | 14.0   | 9.5  | 12.0 | 16.0      | 12.0 | 14.0 |
| 31    | ---      | ---  | ---     | 12.5  | 5.0  | 8.5  | ---    | ---  | ---  | 13.5      | 11.0 | 12.5 |
| MONTH | 9.0      | .0   | 4.79    | 12.5  | .0   | 6.87 | 16.0   | 4.0  | 9.97 | 21.0      | 7.0  | 13.5 |
|       | JUNE     |      |         | JULY  |      |      | AUGUST |      |      | SEPTEMBER |      |      |
| 1     | 12.0     | 9.0  | 10.5    | 22.0  | 14.5 | 18.5 | 22.5   | 14.5 | 18.0 | 21.5      | 13.0 | 17.0 |
| 2     | 16.5     | 8.0  | 11.5    | 21.0  | 16.0 | 18.5 | 22.0   | 13.5 | 17.5 | 19.0      | 14.0 | 16.5 |
| 3     | 19.0     | 9.5  | 14.0    | 21.0  | 15.0 | 17.5 | 22.0   | 13.5 | 17.5 | 16.0      | 14.0 | 15.0 |
| 4     | 20.5     | 11.5 | 16.0    | 20.5  | 13.5 | 17.0 | 22.5   | 13.0 | 17.5 | 15.5      | 12.0 | 13.5 |
| 5     | 20.5     | 13.5 | 17.0    | 22.0  | 14.0 | 17.5 | 21.5   | 14.0 | 17.5 | 18.0      | 11.5 | 14.0 |
| 6     | 18.0     | 14.0 | 16.0    | 20.5  | 14.5 | 17.0 | 22.5   | 13.5 | 17.5 | 18.5      | 10.5 | 14.5 |
| 7     | 16.5     | 14.0 | 15.5    | 19.0  | 13.0 | 16.0 | 19.5   | 14.5 | 16.5 | 19.5      | 12.5 | 15.5 |
| 8     | 20.5     | 13.5 | 16.5    | 17.5  | 14.0 | 16.0 | 22.5   | 13.5 | 17.5 | 19.0      | 12.0 | 15.0 |
| 9     | 17.5     | 14.5 | 16.0    | 20.5  | 15.0 | 17.0 | 22.5   | 14.0 | 18.0 | 18.0      | 11.0 | 14.5 |
| 10    | 18.0     | 14.5 | 16.0    | 16.0  | 13.5 | 15.0 | 21.5   | 14.0 | 17.5 | 18.0      | 11.5 | 14.5 |
| 11    | 20.0     | 13.0 | 16.5    | 16.5  | 12.5 | 14.0 | 21.0   | 14.5 | 17.5 | 19.0      | 10.5 | 14.0 |
| 12    | 21.0     | 13.5 | 17.5    | 20.0  | 12.0 | 15.5 | 21.5   | 13.5 | 17.0 | 18.5      | 10.5 | 14.0 |
| 13    | 23.5     | 14.5 | 19.0    | 21.0  | 13.0 | 17.0 | 17.5   | 14.0 | 15.5 | 16.0      | 11.0 | 13.5 |
| 14    | 23.5     | 15.0 | 19.0    | 23.5  | 13.5 | 18.0 | 19.0   | 13.5 | 16.0 | 18.5      | 10.5 | 14.0 |
| 15    | 21.0     | 15.5 | 18.0    | 24.0  | 14.5 | 19.0 | 15.5   | 14.0 | 15.0 | 17.5      | 11.0 | 14.0 |
| 16    | 21.0     | 14.0 | 17.0    | 21.0  | 16.0 | 18.5 | 16.5   | 12.0 | 14.0 | 15.0      | 11.0 | 13.0 |
| 17    | 19.0     | 12.5 | 16.0    | 17.5  | 14.5 | 16.5 | 19.0   | 11.0 | 14.5 | 14.5      | 8.0  | 11.0 |
| 18    | 19.5     | 12.5 | 15.5    | 15.5  | 13.0 | 14.0 | 20.0   | 11.0 | 15.0 | 15.5      | 8.0  | 11.5 |
| 19    | 17.0     | 12.5 | 14.5    | 17.0  | 11.0 | 14.0 | 18.5   | 11.5 | 15.0 | 16.5      | 10.0 | 13.0 |
| 20    | 20.5     | 12.0 | 16.0    | 19.0  | 11.5 | 15.5 | 22.0   | 15.0 | 17.5 | 17.5      | 9.5  | 13.0 |
| 21    | 21.0     | 13.5 | 17.0    | 16.5  | 15.0 | 16.0 | 18.5   | 13.5 | 16.5 | 17.5      | 10.0 | 13.5 |
| 22    | 18.0     | 14.5 | 16.0    | 20.0  | 13.0 | 16.5 | 21.5   | 13.5 | 17.0 | 18.5      | 10.0 | 14.0 |
| 23    | 18.0     | 12.0 | 15.0    | 21.0  | 13.5 | 17.0 | 19.5   | 14.5 | 17.0 | 18.5      | 10.5 | 14.5 |
| 24    | 21.5     | 13.0 | 16.5    | 23.0  | 14.0 | 18.5 | 17.0   | 14.5 | 16.0 | 19.0      | 11.0 | 14.5 |
| 25    | 22.5     | 12.5 | 17.5    | 21.5  | 14.5 | 18.0 | 17.5   | 14.5 | 15.5 | 18.0      | 12.0 | 15.0 |
| 26    | 23.5     | 13.5 | 18.0    | 23.0  | 15.5 | 19.0 | 18.5   | 12.5 | 15.0 | 15.0      | 11.0 | 13.0 |
| 27    | 23.0     | 15.0 | 18.5    | 22.5  | 16.5 | 19.0 | 19.5   | 10.5 | 14.5 | 13.5      | 9.5  | 11.5 |
| 28    | 21.5     | 15.0 | 18.0    | 22.0  | 16.5 | 19.5 | 19.5   | 13.0 | 16.0 | 15.0      | 8.0  | 11.0 |
| 29    | 22.0     | 14.0 | 18.0    | 20.0  | 16.5 | 18.0 | 20.5   | 12.0 | 16.0 | 16.0      | 8.5  | 12.0 |
| 30    | 21.5     | 15.0 | 18.0    | 24.5  | 16.0 | 19.5 | 21.0   | 13.0 | 17.0 | 15.5      | 8.5  | 12.0 |
| 31    | ---      | ---  | ---     | 23.5  | 16.5 | 20.0 | 21.5   | 13.0 | 17.0 | ---       | ---  | ---  |
| MONTH | 23.5     | 8.0  | 16.3    | 24.5  | 11.0 | 17.2 | 22.5   | 10.5 | 16.4 | 21.5      | 8.0  | 13.7 |
| YEAR  | MAXIMUM  | 24.5 | MINIMUM | .0    | MEAN | 9.99 |        |      |      |           |      |      |



## 06191000 GARDNER RIVER NEAR MAMMOTH, YELLOWSTONE NATIONAL PARK

LOCATION.--Lat 44°59'35", long 110°41'25", Yellowstone National Park, Hydrologic Unit 10070001, on left bank at Wyoming-Montana State line, 400 ft upstream from highway bridge, 0.5 mi downstream from Hot River (formerly Boiling River), 1.5 mi north of Mammoth, and at mile 2.9.

DRAINAGE AREA.--202 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1938 to September 1972, April 1984 to current year. Prior to October 1959, published as Gardiner River near Mammoth.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,620 ft, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream of station.

AVERAGE DISCHARGE.--37 years (1938-72, 1985-87), 217 ft<sup>3</sup>/s, 14.59 in/yr, 157,200 acre ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,080 ft<sup>3</sup>/s, June 4, 1956, gage height, 4.46 ft; maximum gage height, 4.78 ft, June 16, 1962 (backwater from logs and debris); minimum discharge, 35 ft<sup>3</sup>/s, Mar. 28, 1942, gage height, 1.08 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft<sup>3</sup>/s and maximums (\*):

| Date  | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                  | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|-------|------|-----------------------------------|---------------------|---------------------------------------|------|-----------------------------------|---------------------|
| May 1 | 0300 | *445                              | *2.92               | No peaks greater than base discharge. |      |                                   |                     |

Minimum discharge, 46 ft<sup>3</sup>/s, Mar. 29, gage height, 1.69 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|------|------|------|------|------|-------|-------|-------|------|------|------|
| 1     | 157  | 131  | 112  | 99   | 100  | 96   | 96    | 394   | 317   | 150  | 131  | 113  |
| 2     | 159  | 127  | 110  | 116  | 100  | 99   | 96    | 345   | 278   | 150  | 127  | 113  |
| 3     | 154  | 131  | 98   | 112  | 107  | 100  | 97    | 277   | 258   | 146  | 124  | 113  |
| 4     | 152  | 128  | 110  | 110  | 106  | 100  | 101   | 255   | 245   | 144  | 123  | 113  |
| 5     | 151  | 129  | 129  | 110  | 102  | 101  | 104   | 260   | 237   | 141  | 123  | 116  |
| 6     | 151  | 129  | 123  | 110  | 101  | 103  | 110   | 281   | 240   | 137  | 123  | 113  |
| 7     | 151  | 122  | 119  | 103  | 102  | 107  | 117   | 303   | 266   | 136  | 123  | 113  |
| 8     | 150  | 127  | 115  | 90   | 101  | 108  | 122   | 317   | 290   | 135  | 128  | 113  |
| 9     | 148  | 120  | 90   | 100  | 103  | 104  | 114   | 326   | 259   | 153  | 123  | 111  |
| 10    | 147  | 98   | 101  | 104  | 103  | 103  | 109   | 326   | 265   | 164  | 123  | 110  |
| 11    | 142  | 118  | 98   | 114  | 104  | 104  | 117   | 314   | 246   | 205  | 120  | 110  |
| 12    | 140  | 112  | 105  | 115  | 103  | 103  | 111   | 309   | 230   | 168  | 119  | 110  |
| 13    | 143  | 130  | 116  | 116  | 105  | 104  | 107   | 322   | 219   | 148  | 119  | 108  |
| 14    | 143  | 141  | 120  | 106  | 106  | 103  | 114   | 304   | 210   | 142  | 121  | 108  |
| 15    | 142  | 132  | 118  | 96   | 103  | 101  | 129   | 296   | 205   | 136  | 123  | 107  |
| 16    | 142  | 129  | 116  | 86   | 102  | 103  | 149   | 297   | 202   | 134  | 134  | 107  |
| 17    | 141  | 129  | 102  | 109  | 102  | 103  | 184   | 336   | 193   | 167  | 124  | 107  |
| 18    | 141  | 127  | 97   | 115  | 102  | 103  | 221   | 355   | 191   | 270  | 122  | 107  |
| 19    | 141  | 127  | 107  | 110  | 96   | 103  | 196   | 353   | 188   | 212  | 118  | 106  |
| 20    | 141  | 126  | 116  | 102  | 88   | 100  | 158   | 337   | 185   | 175  | 116  | 104  |
| 21    | 140  | 129  | 110  | 101  | 102  | 100  | 173   | 315   | 172   | 175  | 113  | 103  |
| 22    | 138  | 125  | 112  | 100  | 105  | 99   | 205   | 282   | 176   | 184  | 114  | 103  |
| 23    | 136  | 121  | 116  | 104  | 103  | 99   | 226   | 256   | 187   | 160  | 123  | 103  |
| 24    | 136  | 122  | 112  | 109  | 99   | 99   | 232   | 244   | 173   | 149  | 141  | 101  |
| 25    | 135  | 121  | 111  | 107  | 96   | 96   | 237   | 237   | 162   | 143  | 141  | 101  |
| 26    | 135  | 113  | 109  | 106  | 90   | 98   | 255   | 277   | 155   | 141  | 132  | 101  |
| 27    | 137  | 119  | 101  | 107  | 97   | 96   | 267   | 287   | 151   | 141  | 123  | 105  |
| 28    | 137  | 120  | 98   | 107  | 107  | 93   | 289   | 332   | 150   | 139  | 120  | 103  |
| 29    | 134  | 120  | 100  | 105  | ---  | 84   | 325   | 325   | 149   | 139  | 117  | 103  |
| 30    | 140  | 116  | 113  | 101  | ---  | 106  | 340   | 311   | 149   | 142  | 114  | 102  |
| 31    | 137  | ---  | 105  | 106  | ---  | 98   | ---   | 314   | ---   | 135  | 113  | ---  |
| TOTAL | 4441 | 3719 | 3389 | 3276 | 2835 | 3116 | 5101  | 9487  | 6348  | 4861 | 3815 | 3227 |
| MEAN  | 143  | 124  | 109  | 106  | 101  | 101  | 170   | 306   | 212   | 157  | 123  | 108  |
| MAX   | 159  | 141  | 129  | 116  | 107  | 108  | 340   | 394   | 317   | 270  | 141  | 116  |
| MIN   | 134  | 98   | 90   | 86   | 88   | 84   | 96    | 237   | 149   | 134  | 113  | 101  |
| AC-FT | 8810 | 7380 | 6720 | 6500 | 5620 | 6180 | 10120 | 18820 | 12590 | 9640 | 7570 | 6400 |

CAL YR 1986 TOTAL 89124 MEAN 244 MAX 1630 MIN 65 AC-FT 176800  
WTR YR 1987 TOTAL 53615 MEAN 147 MAX 394 MIN 84 AC-FT 106300

## 06191500 YELLOWSTONE RIVER AT CORWIN SPRINGS, MT

LOCATION.--Lat 45°06'43", long 110°47'37", in NW1/4 SE1/4 NW1/4 sec.30, T.8 S., R.8 E., Park County, Hydrologic Unit 10070002, on left bank 20 ft downstream from county road bridge at Corwin Springs, 1.3 mi upstream from Mol Heron Creek, 7 mi northwest of Gardiner, and at mile 549.7.

DRAINAGE AREA.--2,623 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1889 to November 1893 (published as "at Horr"), September 1910 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1912. WSP 1509: 1889-94, 1911, 1913, 1916-18, 1920-21, 1925, 1927. WSP 1559: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,079.09 ft above National Geodetic Vertical Datum of 1929. Aug. 12, 1889, to Nov. 4, 1893, nonrecording gages at site 2 mi upstream at different datums. Sept. 2, 1910, to Apr. 19, 1935, nonrecording gages on bridge at present datum.

REMARKS.--Estimated daily discharges: Nov. 11-13, Dec. 4-16, Jan. 15 to Mar. 3. Water-discharge records good except those for estimated daily discharges, which are poor. Natural storage in Yellowstone Lake. Diversions for irrigation of about 960 acres of which 40 acres lies downstream from station.

AVERAGE DISCHARGE.--81 years, (1890-93, 1911-87) 3,110 ft<sup>3</sup>/s, 16.10 in/yr, 2,253,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 32,000 ft<sup>3</sup>/s, June 14, 15, 1918, gage height, 11.5 ft, from rating curve extended above 18,000 ft<sup>3</sup>/s; minimum observed, 389 ft<sup>3</sup>/s, Feb. 23, Mar. 5, 9, 1937, gage height, 0.05 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,000 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                  | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|---------------------------------------|------|--------------------------------|------------------|
| June 8 | 0845 | *7,620                         | *5.12            | No peaks greater than base discharge. |      |                                |                  |

Minimum discharge, 600 ft<sup>3</sup>/s, Mar. 29, gage height, 0.65 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT    | NOV   | DEC   | JAN   | FEB   | MAR   | APR    | MAY    | JUN    | JUL    | AUG    | SEP   |
|-------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|
| 1     | 2050   | 1490  | 1150  | 985   | e1000 | e910  | 884    | 6020   | 6300   | 3250   | 2320   | 1420  |
| 2     | 2040   | 1420  | 1140  | 966   | e1000 | e910  | 836    | 5570   | 5640   | 3240   | 2240   | 1400  |
| 3     | 1980   | 1470  | 1090  | 994   | e1020 | e910  | 869    | 4230   | 5210   | 3210   | 2170   | 1390  |
| 4     | 1950   | 1460  | e1050 | 1010  | e1000 | 910   | 907    | 3850   | 5000   | 3130   | 2090   | 1390  |
| 5     | 1940   | 1450  | e1100 | 1040  | e1000 | 906   | 956    | 4190   | 4950   | 3030   | 2060   | 1380  |
| 6     | 1950   | 1500  | e1130 | 1020  | e1000 | 923   | 1070   | 4820   | 4920   | 2940   | 2020   | 1360  |
| 7     | 1980   | 1380  | e1110 | 999   | e1020 | 941   | 1160   | 5330   | 5060   | 2860   | 2000   | 1330  |
| 8     | 1960   | 1380  | e1080 | 949   | e1050 | 984   | 1170   | 5660   | 6460   | 2790   | 2000   | 1300  |
| 9     | 1910   | 1370  | e1040 | 913   | e1050 | 939   | 1110   | 5690   | 5900   | 2860   | 1930   | 1280  |
| 10    | 1880   | 1250  | e1000 | 957   | e1050 | 929   | 1020   | 5670   | 5950   | 3000   | 1880   | 1260  |
| 11    | 1790   | e1200 | e1000 | 1030  | e1050 | 929   | 1070   | 5550   | 5700   | 3720   | 1870   | 1240  |
| 12    | 1720   | e1200 | e1000 | 989   | e1020 | 928   | 1060   | 5500   | 5340   | 3420   | 1830   | 1220  |
| 13    | 1740   | e1250 | e1010 | 986   | e1020 | 923   | 1030   | 5910   | 5100   | 2960   | 1770   | 1210  |
| 14    | 1740   | 1420  | e1020 | 965   | e1000 | 943   | 1020   | 5680   | 4820   | 2790   | 1760   | 1190  |
| 15    | 1710   | 1420  | e1050 | e890  | e1000 | 900   | 1120   | 5660   | 4760   | 2680   | 1760   | 1130  |
| 16    | 1690   | 1390  | e1020 | e800  | e980  | 928   | 1330   | 5560   | 4630   | 2620   | 1830   | 1170  |
| 17    | 1670   | 1380  | 1000  | e850  | e970  | 896   | 1590   | 6260   | 4460   | 2700   | 1860   | 1150  |
| 18    | 1670   | 1320  | 996   | e900  | e960  | 916   | 2090   | 6720   | 4300   | 3490   | 1710   | 1130  |
| 19    | 1650   | 1390  | 1010  | e910  | e950  | 907   | 2190   | 6340   | 4290   | 3330   | 1650   | 1120  |
| 20    | 1630   | 1350  | 1020  | e920  | e940  | 843   | 1680   | 6000   | 4280   | 2870   | 1600   | 1100  |
| 21    | 1630   | 1360  | 1030  | e930  | e940  | 885   | 1650   | 5420   | 4080   | 2760   | 1570   | 1080  |
| 22    | 1620   | 1340  | 982   | e940  | e950  | 873   | 2000   | 4920   | 4020   | 3290   | 1550   | 1070  |
| 23    | 1580   | 1340  | 988   | e950  | e950  | 846   | 2640   | 4620   | 4120   | 2870   | 1550   | 1070  |
| 24    | 1570   | 1340  | 1040  | e960  | e920  | 870   | 3210   | 4370   | 3870   | 2690   | 1710   | 1050  |
| 25    | 1550   | 1320  | 1020  | e970  | e900  | 828   | 3620   | 4390   | 3700   | 2580   | 1860   | 1050  |
| 26    | 1540   | 1190  | 991   | e980  | e880  | 876   | 4060   | 4550   | 3570   | 2510   | 1870   | 1030  |
| 27    | 1530   | 1290  | 941   | e1000 | e880  | 834   | 4530   | 4910   | 3470   | 2450   | 1690   | 1040  |
| 28    | 1560   | 1300  | 940   | e1050 | e900  | 857   | 4970   | 6100   | 3390   | 2460   | 1590   | 1020  |
| 29    | 1510   | 1280  | 941   | e1020 | ---   | 729   | 5330   | 6690   | 3320   | 2470   | 1530   | 1010  |
| 30    | 1540   | 1220  | 971   | e1000 | ---   | 824   | 5510   | 6790   | 3260   | 2610   | 1480   | 996   |
| 31    | 1570   | ---   | 962   | e1000 | ---   | 911   | ---    | 6450   | ---    | 2420   | 1450   | ---   |
| TOTAL | 53850  | 40470 | 31822 | 29873 | 27400 | 27708 | 61682  | 169420 | 139970 | 90000  | 56200  | 35636 |
| MEAN  | 1737   | 1349  | 1027  | 964   | 979   | 894   | 2056   | 5465   | 4666   | 2903   | 1813   | 1188  |
| MAX   | 2050   | 1500  | 1150  | 1050  | 1050  | 984   | 5510   | 6790   | 6460   | 3720   | 2320   | 1420  |
| MIN   | 1510   | 1190  | 940   | 800   | 880   | 729   | 836    | 3850   | 3260   | 2420   | 1450   | 996   |
| AC-FT | 106800 | 80270 | 63120 | 59250 | 54350 | 54960 | 122300 | 336000 | 277600 | 178500 | 111500 | 70680 |

CAL YR 1986 TOTAL 1358760 MEAN 3723 MAX 20400 MIN 799 AC-FT 2695000  
WTR YR 1987 TOTAL 764031 MEAN 2093 MAX 6790 MIN 729 AC-FT 1515000

e Estimated

## YELLOWSTONE RIVER BASIN

06191500 YELLOWSTONE RIVER AT CORWIN SPRINGS, MT--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965, 1969-74, 1977-1981, 1984 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1984 to September 1985.

WATER TEMPERATURE: June 1977 to September 1981, March 1984 to September 1985.

SUSPENDED-SEDIMENT DISCHARGE: May 1985 to current year, seasonal.

REMARKS.--Unpublished records of once-daily water temperature are available in files of the Montana District office. Sediment records are seasonal.

## EXTREMES FOR PERIOD OF DAILY RECORDS.--

SPECIFIC CONDUCTANCE (water years 1984-85): Maximum, 311 microsiemens, Feb. 5, 1985; minimum, 71 microsiemens, June 21, 22, 1984.

WATER TEMPERATURE (water years 1977-81, 1984-85): Maximum, 21.5°C, July 22, 23, 1977; minimum, 0.0°C on many days during winter periods most years.

SEDIMENT CONCENTRATION: Maximum daily mean, 645 mg/L, May 28, 1986; minimum daily mean, 1 mg/L several days in September 1987.

SEDIMENT LOAD: Maximum daily, 29,200 tons, June 3, 1986; minimum daily, 2.7 tons, Sep. 29, 1987.

## EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 350 mg/L, July 22; minimum daily mean, 1 mg/L, several days in September.

SEDIMENT LOAD: Maximum daily, 3,450 tons, June 8; minimum daily, 2.7 tons, Sept. 29.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>AIR<br>(DEG C) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|-------|------|-------------------------------------------------|---------------------------------------------------|------------------------------------|--------------------------------------|-------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| OCT   |      |                                                 |                                                   |                                    |                                      |                                           |                                                               |                                                               |
| 22... | 1110 | 1550                                            | 214                                               | 9.0                                | 9.0                                  | --                                        | --                                                            | --                                                            |
| DEC   |      |                                                 |                                                   |                                    |                                      |                                           |                                                               |                                                               |
| 04... | 1148 | 1040                                            | 259                                               | 3.0                                | 0.0                                  | --                                        | --                                                            | --                                                            |
| JAN   |      |                                                 |                                                   |                                    |                                      |                                           |                                                               |                                                               |
| 14... | 1200 | 952                                             | 272                                               | -7.5                               | 0.5                                  | --                                        | --                                                            | --                                                            |
| FEB   |      |                                                 |                                                   |                                    |                                      |                                           |                                                               |                                                               |
| 26... | 0950 | 874                                             | 290                                               | -6.0                               | 0.0                                  | --                                        | --                                                            | --                                                            |
| APR   |      |                                                 |                                                   |                                    |                                      |                                           |                                                               |                                                               |
| 10... | 1245 | 988                                             | 267                                               | 9.0                                | 6.0                                  | 14                                        | 37                                                            | 84                                                            |
| 27... | 1820 | 4130                                            | --                                                | --                                 | 8.5                                  | 88                                        | 981                                                           | 76                                                            |
| MAY   |      |                                                 |                                                   |                                    |                                      |                                           |                                                               |                                                               |
| 20... | 1500 | 5970                                            | 111                                               | 4.0                                | 8.5                                  | 36                                        | 580                                                           | 56                                                            |
| JUN   |      |                                                 |                                                   |                                    |                                      |                                           |                                                               |                                                               |
| 30... | 1420 | 3260                                            | 168                                               | 20.0                               | 19.0                                 | 8                                         | 70                                                            | 56                                                            |
| AUG   |      |                                                 |                                                   |                                    |                                      |                                           |                                                               |                                                               |
| 11... | 1550 | 1880                                            | --                                                | --                                 | 19.5                                 | 5                                         | 25                                                            | 78                                                            |
| SEP   |      |                                                 |                                                   |                                    |                                      |                                           |                                                               |                                                               |
| 24... | 1230 | 1080                                            | 262                                               | 20.5                               | 15.0                                 | --                                        | --                                                            | --                                                            |
| 30... | 1520 | 992                                             | --                                                | --                                 | 14.0                                 | 3                                         | 8.0                                                           | 62                                                            |

06191500 YELLOWSTONE RIVER AT CORWIN SPRINGS, MT--Continued

## SUSPENDED-SEDIMENT, APRIL TO SEPTEMBER 1987

| DAY   | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | LOADS<br>(T/DAY) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | LOADS<br>(T/DAY) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | LOADS<br>(T/DAY) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | LOADS<br>(T/DAY) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | LOADS<br>(T/DAY) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | LOADS<br>(T/DAY) |
|-------|--------------------------------------|------------------|--------------------------------------|------------------|--------------------------------------|------------------|--------------------------------------|------------------|--------------------------------------|------------------|--------------------------------------|------------------|
|       | APRIL                                |                  | MAY                                  |                  | JUNE                                 |                  | JULY                                 |                  | AUGUST                               |                  | SEPTEMBER                            |                  |
| 1     | 6                                    | 14               | 123                                  | 2000             | 56                                   | 953              | 10                                   | 88               | 24                                   | 150              | 6                                    | 23               |
| 2     | 8                                    | 18               | 85                                   | 1280             | 29                                   | 442              | 10                                   | 87               | 11                                   | 67               | 7                                    | 26               |
| 3     | 8                                    | 19               | 30                                   | 343              | 21                                   | 295              | 9                                    | 78               | 9                                    | 53               | 4                                    | 15               |
| 4     | 9                                    | 22               | 24                                   | 249              | 22                                   | 297              | 8                                    | 68               | 9                                    | 51               | 4                                    | 15               |
| 5     | 6                                    | 15               | 34                                   | 385              | 19                                   | 254              | 9                                    | 74               | 12                                   | 67               | 4                                    | 15               |
| 6     | 8                                    | 23               | 53                                   | 690              | 19                                   | 252              | 10                                   | 79               | 7                                    | 38               | 4                                    | 15               |
| 7     | 14                                   | 44               | 59                                   | 849              | 26                                   | 355              | 8                                    | 62               | 8                                    | 43               | 4                                    | 14               |
| 8     | 15                                   | 47               | 61                                   | 932              | 198                                  | 3450             | 8                                    | 60               | 9                                    | 49               | 2                                    | 7.0              |
| 9     | 11                                   | 33               | 64                                   | 983              | 88                                   | 1400             | 9                                    | 69               | 7                                    | 36               | 2                                    | 6.9              |
| 10    | 8                                    | 22               | 58                                   | 888              | 55                                   | 884              | 13                                   | 105              | 6                                    | 30               | 2                                    | 6.8              |
| 11    | 6                                    | 17               | 59                                   | 884              | 32                                   | 492              | 47                                   | 472              | 6                                    | 30               | 2                                    | 6.7              |
| 12    | 9                                    | 26               | 54                                   | 802              | 32                                   | 461              | 22                                   | 203              | 6                                    | 30               | 2                                    | 6.6              |
| 13    | 4                                    | 11               | 64                                   | 1020             | 24                                   | 330              | 10                                   | 80               | 6                                    | 29               | 2                                    | 6.5              |
| 14    | 4                                    | 11               | 62                                   | 951              | 22                                   | 292              | 8                                    | 60               | 6                                    | 29               | 2                                    | 6.4              |
| 15    | 6                                    | 18               | 62                                   | 947              | 20                                   | 257              | 8                                    | 58               | 6                                    | 29               | 2                                    | 6.4              |
| 16    | 10                                   | 36               | 63                                   | 946              | 18                                   | 225              | 10                                   | 71               | 6                                    | 30               | 2                                    | 6.3              |
| 17    | 27                                   | 116              | 98                                   | 1660             | 16                                   | 193              | 11                                   | 80               | 6                                    | 30               | 2                                    | 6.2              |
| 18    | 53                                   | 299              | 113                                  | 2050             | 15                                   | 174              | 90                                   | 848              | 6                                    | 28               | 2                                    | 6.1              |
| 19    | 40                                   | 237              | 77                                   | 1320             | 15                                   | 174              | 47                                   | 423              | 5                                    | 22               | 2                                    | 6.0              |
| 20    | 18                                   | 82               | 47                                   | 761              | 14                                   | 162              | 14                                   | 108              | 5                                    | 22               | 1                                    | 3.0              |
| 21    | 14                                   | 62               | 32                                   | 468              | 15                                   | 165              | 26                                   | 194              | 5                                    | 21               | 3                                    | 8.7              |
| 22    | 20                                   | 108              | 27                                   | 359              | 13                                   | 141              | 350                                  | 3110             | 7                                    | 29               | 2                                    | 5.8              |
| 23    | 51                                   | 364              | 23                                   | 287              | 15                                   | 167              | 45                                   | 349              | 8                                    | 33               | 1                                    | 2.9              |
| 24    | 98                                   | 849              | 16                                   | 189              | 10                                   | 104              | 18                                   | 131              | 24                                   | 111              | 1                                    | 2.8              |
| 25    | 94                                   | 919              | 18                                   | 213              | 10                                   | 100              | 13                                   | 91               | 90                                   | 452              | 1                                    | 2.8              |
| 26    | 129                                  | 1410             | 19                                   | 233              | 12                                   | 116              | 10                                   | 68               | 101                                  | 510              | 1                                    | 2.8              |
| 27    | 136                                  | 1660             | 32                                   | 424              | 13                                   | 122              | 10                                   | 66               | 55                                   | 251              | 1                                    | 2.8              |
| 28    | 149                                  | 2000             | 75                                   | 1240             | 11                                   | 101              | 9                                    | 60               | 35                                   | 150              | 1                                    | 2.8              |
| 29    | 127                                  | 1830             | 128                                  | 2310             | 9                                    | 81               | 64                                   | 427              | 9                                    | 37               | 1                                    | 2.7              |
| 30    | 128                                  | 1900             | 95                                   | 1740             | 8                                    | 70               | 104                                  | 733              | 5                                    | 20               | 2                                    | 5.4              |
| 31    | ---                                  | ---              | 61                                   | 1060             | ---                                  | ---              | 106                                  | 693              | 6                                    | 23               | ---                                  | ---              |
| TOTAL | ---                                  | 12212            | ---                                  | 28463            | ---                                  | 12509            | ---                                  | 9095             | ---                                  | 2500             | ---                                  | 243.4            |

TOTAL LOAD FOR PERIOD: 65022.4 TONS



## 06207500 CLARKS FORK YELLOWSTONE RIVER NEAR BELFRY, MT

LOCATION.--Lat 45°00'37", long 109°03'53", in NW1/4 SW1/4 NW1/4 sec.32, T.9 S., R.22 E., Carbon County, Hydrologic Unit 10070006, on left bank 0.2 mi upstream from county road bridge and Big Sand Coulee, 0.8 mi north of Wyoming-Montana State line, 9.5 mi southwest of Belfry, and at mile 71.2.

DRAINAGE AREA.--1,154 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1921 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as Clarks Fork at Chance prior to October 1956 and as Clarks Fork Yellowstone River at Chance, October 1956 to September 1968.

REVISED RECORDS.--WSP 1309: 1922 (M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,986.24 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Nov. 15, 1934, nonrecording gage, and Nov. 15, 1934, to July 26, 1951, water-stage recorder at bridge 0.4 mi downstream of different datum. July 27, 1951 to Sept. 30, 1953, water-stage recorder at present site at datum 0.98 ft higher.

REMARKS.--Estimated daily discharges: Nov. 6-14, Dec. 2-13, Jan. 6-9, 14-23, Feb. 20-28, Mar. 28-30, Apr. 26-28, May 8-12. Water-discharge records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 11,100 acres upstream from station.

AVERAGE DISCHARGE.--66 years, 943 ft<sup>3</sup>/s, 683,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft<sup>3</sup>/s, June 9, 1981, gage height, 9.97 ft, minimum observed, 32 ft<sup>3</sup>/s, Apr. 26, 1961, result of discharge measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,400 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                  | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|---------------------------------------|------|--------------------------------|------------------|
| May 17 | 0430 | *4,340                         | *5.23            | No peaks greater than base discharge. |      |                                |                  |

Minimum discharge, 108 ft<sup>3</sup>/s, Sept. 30, gage height, 0.67 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY    | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| 1     | 381   | 291   | 326   | 231   | 244   | 231   | 188   | 2480   | 2230  | 701   | 741   | 289   |
| 2     | 381   | 279   | e310  | 260   | 256   | 234   | 188   | 2460   | 1880  | 705   | 614   | 270   |
| 3     | 384   | 260   | e290  | 262   | 243   | 227   | 184   | 1900   | 1570  | 740   | 524   | 250   |
| 4     | 384   | 287   | e260  | 268   | 246   | 226   | 196   | 1480   | 1380  | 723   | 458   | 244   |
| 5     | 401   | 279   | e300  | 266   | 236   | 223   | 219   | 1410   | 1380  | 677   | 390   | 266   |
| 6     | 440   | e270  | e320  | e250  | 234   | 231   | 269   | 1640   | 1470  | 578   | 346   | 255   |
| 7     | 468   | e250  | e300  | e240  | 235   | 235   | 323   | 2030   | 1760  | 488   | 321   | 251   |
| 8     | 459   | e230  | e270  | e210  | 240   | 252   | 336   | e2200  | 3160  | 435   | 328   | 220   |
| 9     | 438   | e200  | e220  | e210  | 244   | 236   | 339   | e2500  | 3290  | 395   | 307   | 212   |
| 10    | 427   | e170  | e210  | 226   | 246   | 226   | 278   | e2700  | 2990  | 463   | 277   | 206   |
| 11    | 425   | e200  | e230  | 247   | 242   | 225   | 267   | e2650  | 2760  | 1380  | 244   | 194   |
| 12    | 374   | e170  | e250  | 271   | 241   | 227   | 284   | e2500  | 2510  | 1510  | 246   | 188   |
| 13    | 362   | e250  | e270  | 265   | 235   | 227   | 260   | 2530   | 2350  | 1240  | 234   | 180   |
| 14    | 428   | e400  | 296   | e210  | 234   | 228   | 231   | 2970   | 2220  | 1090  | 225   | 174   |
| 15    | 417   | 450   | 301   | e170  | 233   | 229   | 205   | 3030   | 2050  | 911   | 222   | 174   |
| 16    | 399   | 440   | 302   | e140  | 223   | 223   | 276   | 2950   | 1870  | 740   | 219   | 171   |
| 17    | 386   | 415   | 283   | e160  | 222   | 223   | 393   | 3740   | 1680  | 618   | 275   | 167   |
| 18    | 372   | 405   | 257   | e190  | 218   | 215   | 552   | 3530   | 1460  | 702   | 226   | 160   |
| 19    | 371   | 439   | 249   | e180  | 224   | 208   | 477   | 3070   | 1280  | 931   | 200   | 151   |
| 20    | 333   | 417   | 278   | e170  | e210  | 201   | 480   | 2630   | 1130  | 795   | 187   | 145   |
| 21    | 330   | 408   | 267   | e180  | e200  | 190   | 480   | 2100   | 1010  | 713   | 171   | 141   |
| 22    | 322   | 422   | 275   | e200  | e220  | 190   | 474   | 1730   | 944   | 1110  | 165   | 137   |
| 23    | 316   | 391   | 287   | e220  | e210  | 185   | 559   | 1470   | 907   | 842   | 167   | 135   |
| 24    | 304   | 388   | 284   | 239   | e190  | 184   | 783   | 1270   | 832   | 762   | 220   | 129   |
| 25    | 296   | 388   | 279   | 245   | e170  | 185   | 953   | 1200   | 753   | 671   | 359   | 126   |
| 26    | 294   | 368   | 268   | 244   | e150  | 180   | e1200 | 1270   | 684   | 596   | 541   | 119   |
| 27    | 290   | 360   | 265   | 258   | e170  | 181   | e1500 | 1820   | 624   | 529   | 598   | 117   |
| 28    | 289   | 372   | 251   | 259   | e200  | e150  | e1900 | 1990   | 652   | 566   | 513   | 117   |
| 29    | 291   | 368   | 247   | 251   | ---   | e120  | 2170  | 2120   | 700   | 614   | 432   | 117   |
| 30    | 287   | 367   | 267   | 237   | ---   | e150  | 2300  | 2210   | 678   | 873   | 369   | 110   |
| 31    | 291   | ---   | 258   | 235   | ---   | 213   | ---   | 2170   | ---   | 852   | 321   | ---   |
| TOTAL | 11340 | 9934  | 8470  | 6994  | 6216  | 6455  | 18264 | 69750  | 48204 | 23950 | 10440 | 5415  |
| MEAN  | 366   | 331   | 273   | 226   | 222   | 208   | 609   | 2250   | 1607  | 773   | 337   | 180   |
| MAX   | 468   | 450   | 326   | 271   | 256   | 252   | 2300  | 3740   | 3290  | 1510  | 741   | 289   |
| MIN   | 287   | 170   | 210   | 140   | 150   | 120   | 184   | 1200   | 624   | 395   | 165   | 110   |
| AC-FT | 22490 | 19700 | 16800 | 13870 | 12330 | 12800 | 36230 | 138300 | 95610 | 47500 | 20710 | 10740 |

CAL YR 1986 TOTAL 368231 MEAN 1009 MAX 8870 MIN 130 AC-FT 730400  
WTR YR 1987 TOTAL 225432 MEAN 618 MAX 3740 MIN 110 AC-FT 447100

e Estimated

06207500 CLARKS FORK YELLOWSTONE RIVER NEAR BELFRY, MT--Continued

## WATER-QUALITY RECORDS

LOCATION.--Samples collected at bridge on county road, 0.2 mi downstream from discharge station, just upstream from Big Sand Coulee, and at mile 71.0.

PERIOD OF RECORD.--Water years 1966 to current year (discontinued). Prior to October 1968 published as "at Chance".

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1965 to September 1969.

WATER TEMPERATURE: October 1965 to September 1969.

SUSPENDED-SEDIMENT DISCHARGE: March to September 1984.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (water years 1966-69): Maximum daily, 409 microsiemens, Oct, 24, 1966; minimum daily, 73 microsiemens, June 6, 8, 1969.

WATER TEMPERATURE (water years 1966-69): Maximum, 22.0 °C, Aug. 23, 24, 1969; minimum, 0.0 °C on many days during winter periods.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>AIR<br>(DEG C) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|------------------------------------|--------------------------------------|
| NOV<br>19... | 1135 | 449                                             | 285                                               | 7.0                                | 4.0                                  |
| DEC<br>17... | 1105 | 262                                             | 310                                               | -0.5                               | 1.0                                  |
| JAN<br>29... | 1040 | 238                                             | 325                                               | 3.0                                | 3.0                                  |
| MAR<br>18... | 1200 | 211                                             | 355                                               | 10.0                               | 7.0                                  |
| APR<br>28... | 1400 | 1920                                            | 116                                               | 15.0                               | 14.5                                 |
| MAY<br>13... | 1400 | 2960                                            | 95                                                | 27.0                               | 13.0                                 |
| 26...        | 1730 | 1230                                            | --                                                | 11.0                               | 15.0                                 |
| JUN<br>09... | 1425 | 3450                                            | 105                                               | 19.0                               | 14.0                                 |
| 30...        | 1130 | 698                                             | --                                                | 27.0                               | 19.0                                 |
| JUL<br>07... | 1400 | 489                                             | --                                                | 26.0                               | 18.0                                 |
| 24...        | 1130 | 797                                             | 170                                               | 22.5                               | 15.5                                 |
| AUG<br>24... | 1340 | 220                                             | 290                                               | 21.0                               | 16.5                                 |

| DATE         | TIME | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| MAY<br>26... | 1730 | <0.1                                                 | 0.01                                                 | 0.59                                                 | 0.6                                                                | 0.18                                        |
| JUN<br>30... | 1130 | <0.1                                                 | 0.02                                                 | 0.58                                                 | 0.6                                                                | 0.02                                        |

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUL<br>07... | 1400 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## YELLOWSTONE RIVER BASIN

06218500 WIND RIVER NEAR DUBOIS, WY

LOCATION.--Lat 43°34'43", long 109°45'33", in NW1/4 NE1/4 sec.25, T.42 N., R.108 W., Fremont County, Hydrologic Unit 10080001, on left bank 2.5 mi upstream from Warm Springs Creek and 6.7 mi northwest of Dubois.

DRAINAGE AREA.--232 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1945 to current year.

REVISED RECORDS.--WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7,188.71 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Estimated daily discharges: Oct. 30 to Mar. 8, Mar. 12, 19-24, 26-28, 30 and Apr. 1-5. Records good except those for estimated daily discharges, which are poor. Diversions upstream from station for irrigation of about 2,300 acres.

AVERAGE DISCHARGE.--42 years, 178 ft<sup>3</sup>/s, 129,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,940 ft<sup>3</sup>/s, June 8, 1972, gage height, 5.48 ft; maximum gage height, 5.66 ft, June 2, 1956; minimum daily discharge, 26 ft<sup>3</sup>/s, Feb. 5, 1982.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 850 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                 | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------------------------------------|------|-----------------------------------|---------------------|
| Dec. 12 | 0800 | ice jam                           | *4.48               | No peak greater than base discharge. |      |                                   |                     |
| May 18  | 1500 | *810                              | 4.31                |                                      |      |                                   |                     |

Minimum daily discharge, 49 ft<sup>3</sup>/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|-------|------|------|------|------|-------|-------|-------|-------|--------|------|
| 1           | 166   | 130   | 80   | 50   | 62   | 52   | 66    | 520   | 386   | 180   | 131    | 89   |
| 2           | 174   | 110   | 78   | 52   | 62   | 52   | 76    | 417   | 316   | 168   | 123    | 85   |
| 3           | 174   | 120   | 75   | 52   | 60   | 52   | 90    | 296   | 287   | 153   | 119    | 85   |
| 4           | 167   | 120   | 72   | 54   | 62   | 54   | 100   | 296   | 289   | 147   | 114    | 92   |
| 5           | 166   | 120   | 70   | 56   | 62   | 56   | 110   | 367   | 336   | 147   | 109    | 92   |
| 6           | 168   | 110   | 74   | 58   | 62   | 60   | 147   | 419   | 361   | 137   | 108    | 86   |
| 7           | 175   | 100   | 74   | 60   | 64   | 66   | 139   | 500   | 428   | 131   | 108    | 84   |
| 8           | 172   | 90    | 68   | 58   | 66   | 70   | 134   | 547   | 528   | 129   | 110    | 80   |
| 9           | 169   | 84    | 60   | 56   | 62   | 70   | 103   | 516   | 538   | 141   | 105    | 78   |
| 10          | 166   | 80    | 54   | 54   | 60   | 67   | 97    | 562   | 467   | 171   | 107    | 77   |
| 11          | 159   | 86    | 50   | 54   | 62   | 65   | 106   | 559   | 445   | 189   | 107    | 77   |
| 12          | 143   | 82    | 52   | 54   | 62   | 66   | 97    | 512   | 422   | 157   | 105    | 76   |
| 13          | 157   | 88    | 54   | 54   | 58   | 68   | 85    | 535   | 431   | 139   | 104    | 74   |
| 14          | 153   | 92    | 56   | 54   | 60   | 69   | 103   | 501   | 394   | 134   | 117    | 75   |
| 15          | 147   | 98    | 56   | 52   | 58   | 67   | 146   | 520   | 364   | 131   | 133    | 75   |
| 16          | 144   | 100   | 56   | 49   | 56   | 65   | 172   | 474   | 335   | 127   | 125    | 73   |
| 17          | 143   | 100   | 54   | 52   | 58   | 64   | 190   | 593   | 295   | 272   | 111    | 72   |
| 18          | 147   | 100   | 54   | 52   | 58   | 64   | 204   | 760   | 261   | 433   | 109    | 71   |
| 19          | 166   | 100   | 56   | 54   | 56   | 64   | 179   | 607   | 249   | 272   | 104    | 72   |
| 20          | 179   | 96    | 58   | 54   | 54   | 66   | 135   | 583   | 225   | 207   | 102    | 71   |
| 21          | 181   | 96    | 56   | 56   | 54   | 66   | 137   | 544   | 222   | 190   | 101    | 70   |
| 22          | 168   | 96    | 56   | 58   | 54   | 68   | 168   | 498   | 220   | 249   | 104    | 69   |
| 23          | 162   | 98    | 56   | 58   | 56   | 68   | 220   | 430   | 202   | 195   | 105    | 66   |
| 24          | 154   | 100   | 54   | 58   | 56   | 68   | 276   | 383   | 187   | 171   | 141    | 65   |
| 25          | 150   | 100   | 54   | 56   | 57   | 66   | 305   | 365   | 183   | 161   | 143    | 66   |
| 26          | 148   | 90    | 52   | 58   | 56   | 66   | 335   | 365   | 180   | 160   | 121    | 65   |
| 27          | 148   | 96    | 52   | 59   | 54   | 68   | 418   | 359   | 169   | 152   | 110    | 65   |
| 28          | 149   | 90    | 52   | 58   | 52   | 66   | 462   | 434   | 171   | 158   | 103    | 65   |
| 29          | 140   | 88    | 50   | 58   | ---  | 64   | 456   | 450   | 168   | 155   | 99     | 65   |
| 30          | 140   | 82    | 50   | 56   | ---  | 64   | 464   | 393   | 167   | 156   | 94     | 64   |
| 31          | 130   | ---   | 50   | 60   | ---  | 65   | ---   | 363   | ---   | 139   | 91     | ---  |
| TOTAL       | 4905  | 2942  | 1833 | 1714 | 1643 | 1986 | 5720  | 14668 | 9226  | 5451  | 3463   | 2244 |
| MEAN        | 158   | 98.1  | 59.1 | 55.3 | 58.7 | 64.1 | 191   | 473   | 308   | 176   | 112    | 74.8 |
| MAX         | 181   | 130   | 80   | 60   | 66   | 70   | 464   | 760   | 538   | 433   | 143    | 92   |
| MIN         | 130   | 80    | 50   | 49   | 52   | 52   | 66    | 296   | 167   | 127   | 91     | 64   |
| AC-FT       | 9730  | 5840  | 3640 | 3400 | 3260 | 3940 | 11350 | 29090 | 18300 | 10810 | 6870   | 4450 |
| CAL YR 1986 | TOTAL | 86333 |      | MEAN | 237  | MAX  | 1800  | MIN   | 45    | AC-FT | 171200 |      |
| WTR YR 1987 | TOTAL | 55795 |      | MEAN | 153  | MAX  | 760   | MIN   | 49    | AC-FT | 110700 |      |

## 06220500 EAST FORK WIND RIVER NEAR DUBOIS, WY

LOCATION.--Lat 43°27'16", long 109°27'57", in SE1/4 SW1/4 NW1/4 sec.34, T.6 N., R.6 W., Fremont County, Hydrologic Unit 10080001, Wind River Indian Reservation, on left bank 1.0 mi upstream from mouth and 9.9 mi southeast of Dubois.

DRAINAGE AREA.--427 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1950 to September 1957, October 1975 to current year. Prior to October 1953, published as North Fork Wind River near Dubois.

GAGE.--Water-stage recorder. Elevation of gage is 6,440 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 30, 1957, at site 50 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 11 to Apr. 10 and May 14-21. Records poor. Diversions for irrigation of about 2,000 acres upstream from station.

AVERAGE DISCHARGE.--19 years, 255 ft<sup>3</sup>/s, 184,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,980 ft<sup>3</sup>/s, June 9, 1981, gage height, 7.69 ft, from rating curve extended above 2,600 ft<sup>3</sup>/s; maximum gage height, 9.27 ft, June 30, 1957; minimum daily discharge, 18 ft<sup>3</sup>/s, Jan. 9, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| June 8 | 0830 | *2,510                            | *5.70               | July 27 | 2200 | 1,830                             | 5.19                |

Minimum daily discharge, 37 ft<sup>3</sup>/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|--------|------|------|------|------|-------|-------|-------|-------|--------|------|
| 1           | 100   | 96     | 72   | 50   | 52   | 50   | 78    | 713   | 558   | 443   | 250    | 114  |
| 2           | 111   | 93     | 70   | 50   | 54   | 52   | 74    | 514   | 449   | 301   | 227    | 107  |
| 3           | 108   | 94     | 68   | 52   | 54   | 56   | 74    | 247   | 392   | 240   | 202    | 110  |
| 4           | 114   | 94     | 66   | 52   | 52   | 61   | 76    | 248   | 496   | 209   | 180    | 121  |
| 5           | 131   | 95     | 66   | 54   | 50   | 64   | 80    | 405   | 812   | 198   | 164    | 132  |
| 6           | 134   | 94     | 66   | 56   | 50   | 66   | 84    | 587   | 805   | 181   | 153    | 117  |
| 7           | 141   | 86     | 66   | 52   | 50   | 68   | 88    | 618   | 1110  | 169   | 154    | 108  |
| 8           | 134   | 78     | 60   | 47   | 52   | 70   | 94    | 703   | 1690  | 153   | 168    | 108  |
| 9           | 141   | 74     | 52   | 42   | 54   | 68   | 100   | 684   | 1330  | 166   | 132    | 102  |
| 10          | 132   | 66     | 47   | 40   | 54   | 68   | 110   | 699   | 867   | 376   | 127    | 101  |
| 11          | 122   | 72     | 50   | 41   | 56   | 66   | 148   | 617   | 775   | 421   | 127    | 105  |
| 12          | 99    | 78     | 50   | 42   | 56   | 66   | 121   | 562   | 791   | 290   | 118    | 104  |
| 13          | 116   | 80     | 52   | 43   | 54   | 68   | 71    | 714   | 787   | 250   | 112    | 96   |
| 14          | 121   | 83     | 54   | 43   | 54   | 70   | 109   | 740   | 770   | 223   | 138    | 97   |
| 15          | 114   | 84     | 53   | 40   | 52   | 70   | 219   | 800   | 723   | 199   | 155    | 97   |
| 16          | 111   | 86     | 52   | 37   | 52   | 68   | 327   | 760   | 698   | 174   | 155    | 92   |
| 17          | 109   | 88     | 52   | 39   | 52   | 68   | 412   | 780   | 545   | 339   | 123    | 83   |
| 18          | 112   | 90     | 50   | 41   | 52   | 66   | 522   | 720   | 420   | 927   | 108    | 82   |
| 19          | 117   | 92     | 49   | 42   | 50   | 68   | 351   | 640   | 404   | 516   | 103    | 98   |
| 20          | 130   | 94     | 50   | 42   | 50   | 68   | 144   | 560   | 314   | 326   | 101    | 100  |
| 21          | 134   | 93     | 50   | 42   | 50   | 68   | 161   | 490   | 343   | 272   | 96     | 102  |
| 22          | 124   | 92     | 50   | 44   | 52   | 68   | 415   | 422   | 311   | 339   | 114    | 102  |
| 23          | 120   | 90     | 52   | 47   | 52   | 66   | 656   | 375   | 243   | 250   | 111    | 102  |
| 24          | 114   | 89     | 52   | 50   | 54   | 66   | 648   | 351   | 209   | 219   | 243    | 99   |
| 25          | 109   | 86     | 52   | 52   | 54   | 64   | 641   | 344   | 214   | 209   | 309    | 98   |
| 26          | 107   | 84     | 50   | 54   | 54   | 64   | 705   | 381   | 215   | 193   | 195    | 102  |
| 27          | 106   | 82     | 49   | 56   | 52   | 62   | 799   | 455   | 208   | 322   | 175    | 100  |
| 28          | 106   | 78     | 49   | 56   | 50   | 60   | 847   | 474   | 212   | 463   | 152    | 97   |
| 29          | 97    | 76     | 49   | 54   | ---  | 58   | 802   | 710   | 208   | 471   | 132    | 95   |
| 30          | 105   | 74     | 49   | 52   | ---  | 62   | 820   | 655   | 506   | 350   | 123    | 93   |
| 31          | 96    | ---    | 52   | 49   | ---  | 76   | ---   | 660   | ---   | 284   | 119    | ---  |
| TOTAL       | 3615  | 2561   | 1699 | 1461 | 1468 | 2015 | 9776  | 17628 | 17405 | 9473  | 4766   | 3064 |
| MEAN        | 117   | 85.4   | 54.8 | 47.1 | 52.4 | 65.0 | 326   | 569   | 580   | 306   | 154    | 102  |
| MAX         | 141   | 96     | 72   | 56   | 56   | 76   | 847   | 800   | 1690  | 927   | 309    | 132  |
| MIN         | 96    | 66     | 47   | 37   | 50   | 50   | 71    | 247   | 208   | 153   | 96     | 82   |
| AC-FT       | 7170  | 5080   | 3370 | 2900 | 2910 | 4000 | 19390 | 34970 | 34520 | 18790 | 9450   | 6080 |
| CAL YR 1986 | TOTAL | 118856 |      | MEAN | 326  | MAX  | 2680  | MIN   | 30    | AC-FT | 235800 |      |
| WTR YR 1987 | TOTAL | 74931  |      | MEAN | 205  | MAX  | 1690  | MIN   | 37    | AC-FT | 148600 |      |



## YELLOWSTONE RIVER BASIN

06220800 WIND RIVER ABOVE RED CREEK, NEAR DUBOIS, WY

LOCATION.--Lat 43°25'49", long 109°26'41", in SE1/4 NW1/4 NW1/4 sec.11, T.5 N., R.6 W, Fremont County, Hydrologic Unit 10080001, Wind River Indian Reservation, 1.2 mi upstream from Little Red Creek, 1.8 miles downstream from East Fork Wind River, and 12.2 miles southeast of Dubois.

PERIOD OF RECORD.--October 1986 to September 1987.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>LAB<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) |
|--------------|------|-------------------------------------------------|----------------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|
| NOV<br>13... | 1145 | 298                                             | 356                                                      | 0.0                                  | 140                                    | 39                                           | 11                                                   | 19                                           | 0.7                                     | 2.4                                                 |
| JAN<br>27... | 1300 | 206                                             | 379                                                      | 0.0                                  | 170                                    | 46                                           | 13                                                   | 11                                           | 0.4                                     | 2.7                                                 |
| MAR<br>10... | 1515 | 213                                             | 389                                                      | 5.5                                  | 160                                    | 46                                           | 12                                                   | 14                                           | 0.5                                     | 2.8                                                 |
| MAY<br>21... | 1115 | 2910                                            | 146                                                      | 7.0                                  | 58                                     | 17                                           | 3.7                                                  | 5.2                                          | 0.3                                     | 1.0                                                 |
| JUL<br>27... | 1040 | 787                                             | 245                                                      | 17.0                                 | 93                                     | 26                                           | 6.8                                                  | 4.9                                          | 0.2                                     | 1.6                                                 |
| SEP<br>02... | 1350 | 402                                             | 274                                                      | 14.5                                 | 130                                    | 36                                           | 9.3                                                  | 9.3                                          | 0.4                                     | 2.6                                                 |

| DATE         | ALKA-<br>LITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|
| NOV<br>13... | 137                                           | 50                                            | 3.7                                                 | 0.3                                                | 13                                                | 220                                                                 | 0.30                                                | 177                                               | <0.1                                                          | 1.10                                        |
| JAN<br>27... | 150                                           | 34                                            | 4.6                                                 | 0.4                                                | 20                                                | 220                                                                 | 0.30                                                | 123                                               | 0.1                                                           | 0.03                                        |
| MAR<br>10... | 150                                           | 34                                            | 4.3                                                 | 0.3                                                | 20                                                | 220                                                                 | 0.30                                                | 128                                               | 0.1                                                           | 0.15                                        |
| MAY<br>21... | 58                                            | 8.2                                           | 1.5                                                 | 0.1                                                | 16                                                | 87                                                                  | 0.12                                                | 687                                               | <0.1                                                          | 0.16                                        |
| JUL<br>27... | 87                                            | 15                                            | 3.6                                                 | 0.2                                                | 15                                                | 130                                                                 | 0.17                                                | 266                                               | 0.1                                                           | 0.06                                        |
| SEP<br>02... | 120                                           | 23                                            | 3.1                                                 | 0.2                                                | 17                                                | 170                                                                 | 0.23                                                | 187                                               | <0.1                                                          | 0.04                                        |

| DATE         | TIME | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) |
|--------------|------|----------------------------------------------|----------------------------------------------|----------------------------------------------|-----------------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|
| MAY<br>21... | 1115 | 2                                            | <100                                         | <1                                           | <1                                                  | <5                                         | 1.3                                          | <1                                                  | <1                                           |
| SEP<br>02... | 1350 | 2                                            | 100                                          | <1                                           | 3                                                   | <5                                         | 0.2                                          | <1                                                  | <1                                           |

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

## 06222700 CROW CREEK NEAR TIPPERARY, WY

LOCATION.--Lat 43°34'37", long 109°15'42", in sec.20, T.7 N., R.4 W., Fremont County, Hydrologic Unit 10080001, Wind River Indian Reservation, on right bank just above Crow Creek Canyon, 2.0 mi downstream from Trail Creek, 5.0 mi north of Tipperary, and 19 mi north of Crowheart.

DRAINAGE AREA.--30.2 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR-76-1: Drainage area. WDR WY-86: 1985(M).

GAGE.--Water-stage recorder. Elevation of gage is 8,600 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 27, 1983, at site 50 ft downstream at present datum.

REMARKS.--Estimated daily discharges: Oct. 12, 13, Oct. 31 to Nov. 5, and Nov. 7 to Mar. 5. Records good except those for November to February, which are poor. No diversion upstream from station.

AVERAGE DISCHARGE.--25 years, 21.3 ft<sup>3</sup>/s, 15,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 855 ft<sup>3</sup>/s, July 27, 1987, gage height, 6.89 ft, from rating curve extended above 260 ft<sup>3</sup>/s; minimum daily discharge, 0.48 ft<sup>3</sup>/s, Jan. 9, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 180 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                       | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------------------------------------------|------|-----------------------------------|---------------------|
| July 27 | 1900 | *855                              | *6.89               | No other peak greater than base discharge. |      |                                   |                     |

Minimum daily discharge, 1.6 ft<sup>3</sup>/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR   | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|--------|------|------|------|------|-------|------|------|-------|-------|-------|
| 1           | 5.9   | 5.1    | 3.9  | 1.9  | 2.2  | 2.3  | 2.7   | 71   | 57   | 39    | 40    | 11    |
| 2           | 6.0   | 5.6    | 3.7  | 1.9  | 2.3  | 2.4  | 2.5   | 55   | 51   | 33    | 35    | 10    |
| 3           | 6.2   | 6.0    | 3.3  | 2.0  | 2.3  | 2.5  | 2.7   | 38   | 48   | 28    | 30    | 11    |
| 4           | 6.5   | 5.9    | 3.0  | 2.0  | 2.3  | 2.6  | 3.2   | 37   | 58   | 26    | 26    | 11    |
| 5           | 6.2   | 5.9    | 2.7  | 2.1  | 2.4  | 2.8  | 3.9   | 53   | 69   | 24    | 24    | 11    |
| 6           | 5.9   | 6.0    | 2.5  | 2.2  | 2.4  | 3.1  | 4.9   | 63   | 72   | 22    | 22    | 9.5   |
| 7           | 6.0   | 5.8    | 2.3  | 2.1  | 2.4  | 3.2  | 5.6   | 69   | 86   | 20    | 24    | 9.0   |
| 8           | 5.9   | 5.6    | 2.1  | 2.0  | 2.5  | 3.2  | 6.1   | 74   | 133  | 19    | 22    | 8.9   |
| 9           | 6.2   | 5.6    | 1.9  | 1.8  | 2.5  | 3.0  | 5.2   | 72   | 110  | 18    | 19    | 8.8   |
| 10          | 6.2   | 5.6    | 1.8  | 1.7  | 2.5  | 2.8  | 5.1   | 76   | 90   | 46    | 19    | 8.5   |
| 11          | 5.2   | 5.8    | 1.9  | 1.8  | 2.5  | 3.0  | 5.0   | 77   | 84   | 40    | 17    | 8.6   |
| 12          | 5.8   | 5.8    | 2.0  | 1.9  | 2.4  | 2.8  | 4.6   | 75   | 83   | 33    | 16    | 8.5   |
| 13          | 6.3   | 5.8    | 2.0  | 1.9  | 2.4  | 3.1  | 3.8   | 78   | 78   | 33    | 16    | 8.3   |
| 14          | 6.4   | 6.0    | 2.1  | 1.8  | 2.4  | 3.0  | 5.2   | 78   | 72   | 34    | 21    | 8.3   |
| 15          | 5.7   | 6.2    | 2.1  | 1.7  | 2.4  | 2.7  | 9.5   | 87   | 70   | 33    | 20    | 8.2   |
| 16          | 5.5   | 6.2    | 2.1  | 1.6  | 2.3  | 2.9  | 13    | 81   | 63   | 30    | 17    | 8.1   |
| 17          | 5.4   | 6.2    | 2.1  | 1.7  | 2.3  | 2.7  | 21    | 84   | 52   | 37    | 14    | 7.9   |
| 18          | 5.4   | 6.0    | 2.1  | 1.7  | 2.4  | 2.7  | 27    | 78   | 49   | 48    | 13    | 7.5   |
| 19          | 5.9   | 6.0    | 2.0  | 1.8  | 2.4  | 2.7  | 17    | 64   | 43   | 38    | 13    | 7.2   |
| 20          | 6.3   | 5.8    | 2.1  | 1.8  | 2.4  | 2.6  | 10    | 62   | 41   | 32    | 13    | 7.2   |
| 21          | 6.7   | 5.8    | 2.1  | 1.9  | 2.3  | 2.7  | 13    | 53   | 41   | 31    | 13    | 7.2   |
| 22          | 6.4   | 5.6    | 2.1  | 1.9  | 2.3  | 2.7  | 33    | 48   | 37   | 33    | 13    | 7.2   |
| 23          | 6.1   | 5.4    | 2.1  | 1.9  | 2.4  | 2.6  | 53    | 43   | 31   | 27    | 12    | 7.0   |
| 24          | 5.4   | 5.4    | 2.0  | 2.0  | 2.4  | 2.6  | 55    | 43   | 29   | 25    | 15    | 6.8   |
| 25          | 5.3   | 5.2    | 2.0  | 2.1  | 2.4  | 2.7  | 58    | 46   | 30   | 23    | 15    | 6.8   |
| 26          | 5.3   | 5.0    | 1.9  | 2.3  | 2.3  | 2.6  | 60    | 49   | 29   | 21    | 14    | 6.9   |
| 27          | 5.4   | 4.8    | 1.9  | 2.3  | 2.3  | 2.5  | 66    | 47   | 28   | 78    | 13    | 6.7   |
| 28          | 5.4   | 4.5    | 1.9  | 2.3  | 2.2  | 2.6  | 76    | 50   | 29   | 50    | 12    | 6.3   |
| 29          | 5.3   | 4.3    | 1.9  | 2.2  | ---  | 2.5  | 74    | 57   | 28   | 112   | 12    | 6.3   |
| 30          | 5.5   | 4.1    | 1.9  | 2.2  | ---  | 2.4  | 75    | 58   | 37   | 54    | 12    | 6.2   |
| 31          | 5.2   | ---    | 2.0  | 2.1  | ---  | 2.6  | ---   | 63   | ---  | 46    | 11    | ---   |
| TOTAL       | 180.9 | 167.0  | 69.5 | 60.6 | 66.3 | 84.6 | 721.0 | 1929 | 1728 | 1133  | 563   | 245.9 |
| MEAN        | 5.84  | 5.57   | 2.24 | 1.95 | 2.37 | 2.73 | 24.0  | 62.2 | 57.6 | 36.5  | 18.2  | 8.20  |
| MAX         | 6.7   | 6.2    | 3.9  | 2.3  | 2.5  | 3.2  | 76    | 87   | 133  | 112   | 40    | 11    |
| MIN         | 5.2   | 4.1    | 1.8  | 1.6  | 2.2  | 2.3  | 2.5   | 37   | 28   | 18    | 11    | 6.2   |
| AC-FT       | 359   | 331    | 138  | 120  | 132  | 168  | 1430  | 3830 | 3430 | 2250  | 1120  | 488   |
| CAL YR 1986 | TOTAL | 9869.1 |      | MEAN | 27.0 | MAX  | 281   | MIN  | 1.8  | AC-FT | 19580 |       |
| WTR YR 1987 | TOTAL | 6948.8 |      | MEAN | 19.0 | MAX  | 133   | MIN  | 1.6  | AC-FT | 13780 |       |

06222700 CROW CREEK NEAR TIPPERARY, WY--Continued

## WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) |
|-------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------------|
| OCT   |      |                                                 |                                                   |                                      |
| 01... | 0915 | 5.7                                             | 100                                               | 4.0                                  |
| NOV   |      |                                                 |                                                   |                                      |
| 13... | 1200 | 5.9                                             | 87                                                | 0.0                                  |
| DEC   |      |                                                 |                                                   |                                      |
| 17... | 1225 | 2.1                                             | 85                                                | 0.0                                  |
| FEB   |      |                                                 |                                                   |                                      |
| 05... | 1315 | 2.4                                             | 101                                               | 0.0                                  |
| MAR   |      |                                                 |                                                   |                                      |
| 09... | 1330 | 3.3                                             | 97                                                | 1.0                                  |
| MAY   |      |                                                 |                                                   |                                      |
| 07... | 1430 | 50                                              | 54                                                | 11.0                                 |
| 19... | 1230 | 59                                              | 56                                                | 8.0                                  |
| JUL   |      |                                                 |                                                   |                                      |
| 09... | 1040 | 19                                              | 38                                                | 15.0                                 |
| AUG   |      |                                                 |                                                   |                                      |
| 12... | 1040 | 17                                              | 87                                                | 10.5                                 |
| SEP   |      |                                                 |                                                   |                                      |
| 02... | 1110 | 11                                              | 95                                                | 10.5                                 |



## YELLOWSTONE RIVER BASIN

06224000 BULL LAKE CREEK ABOVE BULL LAKE, WY

LOCATION.--Lat 43°10'37", long 109°12'08", in NE1/4 SW1/4 sec.2, T.2 N., R.4 W., Fremont County, Hydrologic Unit 10080001, Wind River Indian Reservation, on left bank 1.2 mi upstream from high-water line of Bull Lake and 9.0 mi south of Crowheart.

DRAINAGE AREA.--187 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1941 to December 1953, October 1966 to current year. Monthly discharge only for some periods, published in WSP 1309. Prior to October 1950, published as "above Bull Lake Reservoir."

GAGE.--Water-stage recorder. Elevation of gage is 5,874 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 10 to Nov. 18, Jan. 7-24, Feb. 25 to Mar. 4, and May 12-14. Records fair, except those for estimated daily discharges, which are poor. No diversions upstream from station.

AVERAGE DISCHARGE.--33 years (water years 1942-53, 1967-87), 301 ft<sup>3</sup>/s, 218,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,470 ft<sup>3</sup>/s, June 9, 1981, gage height, 7.98 ft; minimum, 5.2 ft<sup>3</sup>/s, Jan. 28, 1970, gage height, 1.44 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| June 9 | 2200 | 1,550                             | 5.14                | July 11 | 0800 | *1,970                            | *5.65               |

Minimum daily discharge, 18 ft<sup>3</sup>/s, Feb. 28, Mar. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR  | MAY   | JUN   | JUL   | AUG    | SEP   |
|-------------|-------|--------|------|------|------|------|------|-------|-------|-------|--------|-------|
| 1           | 91    | 96     | 56   | 23   | 24   | 18   | 23   | 729   | 426   | 626   | 602    | 235   |
| 2           | 101   | 90     | 60   | 24   | 23   | 18   | 23   | 745   | 395   | 587   | 570    | 248   |
| 3           | 107   | 86     | 51   | 24   | 19   | 19   | 22   | 677   | 360   | 571   | 534    | 250   |
| 4           | 103   | 82     | 51   | 25   | 20   | 19   | 24   | 577   | 353   | 546   | 481    | 274   |
| 5           | 102   | 80     | 62   | 25   | 21   | 20   | 25   | 540   | 404   | 498   | 439    | 288   |
| 6           | 102   | 80     | 56   | 26   | 22   | 22   | 27   | 548   | 507   | 471   | 419    | 285   |
| 7           | 100   | 74     | 52   | 26   | 23   | 24   | 28   | 596   | 703   | 467   | 402    | 252   |
| 8           | 101   | 68     | 46   | 26   | 22   | 28   | 31   | 667   | 1040  | 441   | 393    | 223   |
| 9           | 104   | 64     | 36   | 25   | 22   | 22   | 33   | 755   | 1400  | 429   | 368    | 194   |
| 10          | 102   | 60     | 33   | 24   | 21   | 21   | 30   | 824   | 1490  | 765   | 356    | 185   |
| 11          | 100   | 64     | 48   | 25   | 21   | 20   | 31   | 860   | 1260  | 1840  | 361    | 181   |
| 12          | 94    | 68     | 48   | 25   | 21   | 20   | 31   | 871   | 1080  | 1270  | 367    | 181   |
| 13          | 100   | 70     | 47   | 26   | 20   | 22   | 29   | 890   | 1020  | 857   | 351    | 179   |
| 14          | 100   | 74     | 47   | 25   | 20   | 22   | 31   | 859   | 1010  | 659   | 335    | 180   |
| 15          | 96    | 74     | 44   | 25   | 20   | 20   | 34   | 919   | 1020  | 567   | 379    | 175   |
| 16          | 93    | 70     | 42   | 22   | 20   | 22   | 43   | 959   | 1150  | 530   | 403    | 173   |
| 17          | 90    | 70     | 37   | 23   | 20   | 24   | 46   | 1060  | 1080  | 580   | 363    | 171   |
| 18          | 90    | 71     | 34   | 25   | 20   | 25   | 36   | 1220  | 897   | 1010  | 309    | 159   |
| 19          | 110   | 77     | 37   | 25   | 20   | 24   | 53   | 1210  | 753   | 1170  | 268    | 146   |
| 20          | 130   | 76     | 37   | 24   | 19   | 23   | 71   | 968   | 655   | 864   | 244    | 135   |
| 21          | 170   | 76     | 35   | 24   | 19   | 23   | 86   | 885   | 607   | 685   | 236    | 127   |
| 22          | 170   | 74     | 34   | 24   | 20   | 21   | 115  | 849   | 606   | 1050  | 231    | 123   |
| 23          | 160   | 85     | 34   | 24   | 20   | 22   | 162  | 725   | 599   | 1150  | 234    | 126   |
| 24          | 150   | 77     | 32   | 23   | 20   | 22   | 204  | 603   | 534   | 917   | 270    | 136   |
| 25          | 140   | 71     | 31   | 24   | 20   | 22   | 263  | 548   | 474   | 767   | 347    | 144   |
| 26          | 140   | 64     | 30   | 24   | 19   | 21   | 334  | 479   | 459   | 675   | 366    | 148   |
| 27          | 140   | 67     | 29   | 24   | 19   | 21   | 407  | 447   | 479   | 628   | 339    | 145   |
| 28          | 130   | 63     | 29   | 24   | 18   | 22   | 485  | 420   | 512   | 620   | 300    | 137   |
| 29          | 120   | 61     | 28   | 23   | ---  | 20   | 575  | 451   | 542   | 598   | 264    | 129   |
| 30          | 120   | 63     | 27   | 23   | ---  | 23   | 660  | 461   | 606   | 599   | 235    | 122   |
| 31          | 110   | ---    | 24   | 24   | ---  | 24   | ---  | 433   | ---   | 601   | 231    | ---   |
| TOTAL       | 3566  | 2195   | 1257 | 754  | 573  | 674  | 3962 | 22775 | 22421 | 23038 | 10997  | 5451  |
| MEAN        | 115   | 73.2   | 40.5 | 24.3 | 20.5 | 21.7 | 132  | 735   | 747   | 743   | 355    | 182   |
| MAX         | 170   | 96     | 62   | 26   | 24   | 28   | 660  | 1220  | 1490  | 1840  | 602    | 288   |
| MIN         | 90    | 60     | 24   | 22   | 18   | 18   | 22   | 420   | 353   | 429   | 231    | 122   |
| AC-FT       | 7070  | 4350   | 2490 | 1500 | 1140 | 1340 | 7860 | 45170 | 44470 | 45700 | 21810  | 10810 |
| CAL YR 1986 | TOTAL | 152169 |      | MEAN | 417  | MAX  | 2970 | MIN   | 20    | AC-FT | 301800 |       |
| WTR YR 1987 | TOTAL | 97663  |      | MEAN | 268  | MAX  | 1840 | MIN   | 18    | AC-FT | 193700 |       |

06224000 BULL LAKE CREEK ABOVE BULL LAKE, WY--Continued

## WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) |
|-------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------------|
| OCT   |      |                                                 |                                                   |                                      |
| 10... | 1015 | 102                                             | 40                                                | 4.0                                  |
| NOV   |      |                                                 |                                                   |                                      |
| 18... | 1420 | 71                                              | 63                                                | 1.5                                  |
| FEB   |      |                                                 |                                                   |                                      |
| 02... | 0930 | 24                                              | 137                                               | 0.0                                  |
| MAR   |      |                                                 |                                                   |                                      |
| 23... | 1015 | 19                                              | 126                                               | 3.0                                  |
| APR   |      |                                                 |                                                   |                                      |
| 17... | 1450 | 57                                              | 115                                               | 10.0                                 |
| MAY   |      |                                                 |                                                   |                                      |
| 13... | 1155 | 880                                             | 36                                                | 14.0                                 |
| JUN   |      |                                                 |                                                   |                                      |
| 25... | 1055 | 475                                             | 30                                                | 12.0                                 |
| JUL   |      |                                                 |                                                   |                                      |
| 22... | 1030 | 1090                                            | 24                                                | 12.5                                 |
| AUG   |      |                                                 |                                                   |                                      |
| 14... | 1115 | 336                                             | 72                                                | 21.0                                 |
| SEP   |      |                                                 |                                                   |                                      |
| 10... | 1200 | 180                                             | 29                                                | 13.5                                 |

## 06225000 BULL LAKE CREEK NEAR LENORE, WY

LOCATION.--Lat 43°14'33", long 109°01'20", in NE1/4 NW1/4 sec.17, T.3 N., R.2 W., Fremont County, Hydrologic Unit 10080001, Wind River Indian Reservation, on left bank 700 ft upstream from mouth, 2.8 mi downstream from Bull Lake, and 8.5 mi southeast of Lenore.

DRAINAGE AREA.--213 mi<sup>2</sup>, of which 12 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--May 1918 to current year.

REVISED RECORDS.--WSP 1309: 1921 (M, date only), 1925(M), 1926(M), 1930(M). WSP 1709: Drainage area.

CORRECTIONS.--The date of the minimum daily discharge for water year 1986 was Mar. 20, not Feb. 20 as published in the report for 1986.

GAGE.--Water-stage recorder. Elevation of gage is 5,654 ft above National Geodetic Vertical Datum of 1929, from topographic map. May 18, 1918, to Sept. 30, 1922, at site 10 ft upstream at datum 0.86 ft higher; Oct. 1, 1922, to Oct. 3, 1934, at present site at datum 2.00 ft lower.

REMARKS.--Estimated daily discharges: Dec. 9-13, 15-22, 24-26, Dec. 28 to Jan. 3, Jan. 5, 7-26, Feb. 20-24, 26, Feb. 28 to Mar. 1, Mar. 29, and Apr. 30 to May 12. Records good except those for estimated daily discharges, which are poor. Flow completely regulated by Bull Lake 2.8 mi upstream since April 1938. (See station 06224500.) Diversions upstream from station for irrigation of about 730 acres downstream. U.S. Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--69 years, 280 ft<sup>3</sup>/s, 202,900 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,200 ft<sup>3</sup>/s, Aug. 8, 1951, gage height, 7.09 ft, result of automatic spillway gates releasing on Bull Lake Dam, from rating curve extended above 2,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum prior to construction of Bull Lake Dam not determined, probably occurred during period of ice effect in March 1933; no flow Feb. 28 to Apr. 7, 1937 (result of regulation).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,760 ft<sup>3</sup>/s, June 18, gage height, 4.26 ft; minimum daily, 20 ft<sup>3</sup>/s, Oct. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV      | DEC  | JAN  | FEB  | MAR  | APR   | MAY  | JUN   | JUL   | AUG    | SEP   |
|-------------|-------|----------|------|------|------|------|-------|------|-------|-------|--------|-------|
| 1           | 333   | 37       | 49   | 39   | 32   | 33   | 53    | 160  | 53    | 756   | 737    | 455   |
| 2           | 87    | 40       | 49   | 40   | 32   | 35   | 53    | 160  | 53    | 720   | 735    | 465   |
| 3           | 34    | 39       | 49   | 42   | 32   | 35   | 53    | 160  | 53    | 658   | 723    | 472   |
| 4           | 49    | 38       | 49   | 44   | 32   | 35   | 53    | 160  | 52    | 656   | 692    | 469   |
| 5           | 49    | 36       | 49   | 44   | 32   | 35   | 53    | 160  | 52    | 654   | 686    | 467   |
| 6           | 48    | 40       | 48   | 44   | 32   | 35   | 53    | 160  | 52    | 687   | 644    | 465   |
| 7           | 38    | 42       | 48   | 44   | 32   | 35   | 158   | 160  | 53    | 813   | 583    | 466   |
| 8           | 38    | 46       | 48   | 43   | 32   | 35   | 302   | 160  | 55    | 921   | 581    | 430   |
| 9           | 39    | 48       | 48   | 42   | 32   | 35   | 304   | 100  | 55    | 986   | 583    | 359   |
| 10          | 40    | 52       | 47   | 40   | 32   | 35   | 302   | 55   | 57    | 1080  | 590    | 335   |
| 11          | 41    | 52       | 45   | 39   | 33   | 35   | 302   | 52   | 59    | 982   | 606    | 292   |
| 12          | 42    | 50       | 45   | 38   | 33   | 35   | 296   | 50   | 60    | 798   | 658    | 293   |
| 13          | 43    | 47       | 47   | 37   | 33   | 36   | 263   | 47   | 60    | 757   | 687    | 293   |
| 14          | 43    | 47       | 50   | 37   | 33   | 44   | 217   | 45   | 61    | 757   | 709    | 407   |
| 15          | 35    | 49       | 49   | 36   | 33   | 44   | 219   | 76   | 113   | 782   | 714    | 634   |
| 16          | 35    | 52       | 48   | 36   | 33   | 50   | 219   | 117  | 461   | 845   | 705    | 677   |
| 17          | 27    | 52       | 46   | 35   | 33   | 47   | 216   | 108  | 1330  | 847   | 712    | 673   |
| 18          | 24    | 52       | 44   | 35   | 32   | 47   | 152   | 64   | 1310  | 816   | 724    | 715   |
| 19          | 21    | 52       | 42   | 34   | 22   | 47   | 152   | 61   | 912   | 572   | 691    | 761   |
| 20          | 20    | 50       | 43   | 34   | 22   | 48   | 141   | 51   | 777   | 578   | 722    | 762   |
| 21          | 21    | 50       | 42   | 33   | 30   | 48   | 147   | 48   | 748   | 628   | 724    | 779   |
| 22          | 30    | 50       | 40   | 33   | 34   | 48   | 199   | 44   | 592   | 727   | 726    | 814   |
| 23          | 31    | 50       | 39   | 32   | 35   | 48   | 193   | 44   | 468   | 739   | 722    | 808   |
| 24          | 30    | 52       | 39   | 32   | 35   | 47   | 163   | 45   | 477   | 745   | 715    | 806   |
| 25          | 28    | 50       | 38   | 34   | 36   | 47   | 164   | 47   | 495   | 732   | 625    | 806   |
| 26          | 28    | 51       | 37   | 37   | 30   | 49   | 164   | 49   | 495   | 727   | 474    | 797   |
| 27          | 28    | 50       | 42   | 32   | 23   | 52   | 164   | 52   | 578   | 741   | 472    | 761   |
| 28          | 27    | 51       | 40   | 32   | 25   | 52   | 164   | 52   | 615   | 752   | 459    | 758   |
| 29          | 28    | 51       | 39   | 32   | ---  | 52   | 161   | 50   | 659   | 748   | 458    | 755   |
| 30          | 28    | 51       | 42   | 31   | ---  | 53   | 160   | 50   | 699   | 752   | 457    | 733   |
| 31          | 28    | ---      | 39   | 31   | ---  | 53   | ---   | 51   | ---   | 752   | 454    | ---   |
| TOTAL       | 1393  | 1427     | 1380 | 1142 | 875  | 1330 | 5240  | 2638 | 11504 | 23708 | 19768  | 17707 |
| MEAN        | 44.9  | 47.6     | 44.5 | 36.8 | 31.3 | 42.9 | 175   | 85.1 | 383   | 765   | 638    | 590   |
| MAX         | 333   | 52       | 50   | 44   | 36   | 53   | 304   | 160  | 1330  | 1080  | 737    | 814   |
| MIN         | 20    | 36       | 37   | 31   | 22   | 33   | 53    | 44   | 52    | 572   | 454    | 292   |
| AC-FT       | 2760  | 2830     | 2740 | 2270 | 1740 | 2640 | 10390 | 5230 | 22820 | 47020 | 39210  | 35120 |
| CAL YR 1986 | TOTAL | 108191.0 |      | MEAN | 296  | MAX  | 1740  | MIN  | 2.8   | AC-FT | 214600 |       |
| WTR YR 1987 | TOTAL | 88112    |      | MEAN | 241  | MAX  | 1330  | MIN  | 20    | AC-FT | 174800 |       |

## 06225500 WIND RIVER NEAR CROWHEART, WY

LOCATION.--Lat 43°14'33", long 109°00'35", in NW1/4 NW1/4 sec.16, T.3 N., R.2 W., Fremont County, Hydrologic Unit 10080001, Wind River Indian Reservation, on right bank 0.9 mi downstream from Bull Lake Creek and 9.0 mi southeast of Crowheart.

DRAINAGE AREA.--1,891 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year.

REVISED RECORDS.--WSP 1116: 1946-47. WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,635 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 10-16, Nov. 26 to Feb. 18, Feb. 20-22, Feb. 25 to Mar. 2, Apr. 6, 7, 27, 28, and June 30 to July 1. Records poor. Some regulation by Bull Lake on Bull Lake Creek. (See station 06224500.) Diversions for irrigation of about 25,000 acres upstream from station. U.S. Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--42 years, 1,237 ft<sup>3</sup>/s, 896,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft<sup>3</sup>/s, June 16, 1963, gage height, 9.16 ft; maximum gage height, 9.59 ft, June 9, 1981; minimum daily discharge, 130 ft<sup>3</sup>/s, Feb. 5, 1982.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 29, 1927, reached a discharge of 13,000 ft<sup>3</sup>/s; discharge measurement made by Bureau of Reclamation at site 1.0 mi downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,340 ft<sup>3</sup>/s, July 18, gage height, 8.43 ft; minimum daily, 280 ft<sup>3</sup>/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY    | JUN    | JUL           | AUG   | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|--------|--------|---------------|-------|-------|
| 1           | 744   | 627    | 550   | 350   | 330   | 300   | 450   | 2780   | 1660   | 2100          | 2050  | 1030  |
| 2           | 690   | 624    | 530   | 360   | 340   | 330   | 450   | 2560   | 1430   | 2000          | 1980  | 1020  |
| 3           | 685   | 609    | 500   | 370   | 340   | 340   | 450   | 2020   | 1250   | 1850          | 1910  | 1020  |
| 4           | 685   | 622    | 480   | 380   | 343   | 347   | 459   | 1830   | 1220   | 1780          | 1800  | 1050  |
| 5           | 685   | 617    | 460   | 390   | 330   | 344   | 532   | 1980   | 1500   | 1750          | 1670  | 1120  |
| 6           | 685   | 625    | 450   | 400   | 320   | 371   | 680   | 2160   | 1610   | 1680          | 1550  | 1120  |
| 7           | 662   | 635    | 450   | 400   | 320   | 450   | 752   | 2210   | 1940   | 1750          | 1420  | 1090  |
| 8           | 646   | 600    | 430   | 370   | 320   | 509   | 851   | 2430   | 3020   | 1810          | 1480  | 1010  |
| 9           | 638   | 607    | 400   | 350   | 330   | 407   | 786   | 2340   | 3390   | 1840          | 1400  | 912   |
| 10          | 631   | 580    | 350   | 330   | 340   | 375   | 701   | 2400   | 3090   | 2180          | 1340  | 866   |
| 11          | 640   | 550    | 380   | 330   | 350   | 375   | 707   | 2310   | 2710   | 2840          | 1330  | 797   |
| 12          | 623   | 550    | 400   | 340   | 350   | 367   | 735   | 2180   | 2500   | 2480          | 1380  | 774   |
| 13          | 617   | 580    | 420   | 350   | 350   | 383   | 637   | 2360   | 2480   | 2110          | 1410  | 761   |
| 14          | 631   | 600    | 420   | 350   | 330   | 412   | 576   | 2190   | 2410   | 1940          | 1400  | 860   |
| 15          | 625   | 600    | 420   | 320   | 310   | 399   | 674   | 2490   | 2350   | 1810          | 1580  | 1080  |
| 16          | 623   | 590    | 410   | 280   | 300   | 407   | 839   | 2330   | 2790   | 1820          | 1610  | 1110  |
| 17          | 612   | 601    | 400   | 300   | 300   | 407   | 888   | 2600   | 3600   | 1920          | 1530  | 1100  |
| 18          | 611   | 607    | 390   | 320   | 320   | 407   | 995   | 3070   | 3330   | 3380          | 1430  | 1130  |
| 19          | 627   | 611    | 375   | 320   | 328   | 407   | 976   | 2710   | 2640   | 3070          | 1340  | 1170  |
| 20          | 660   | 597    | 380   | 310   | 310   | 391   | 780   | 2220   | 2240   | 2360          | 1290  | 1160  |
| 21          | 687   | 604    | 380   | 310   | 300   | 379   | 696   | 2240   | 2150   | 2080          | 1260  | 1170  |
| 22          | 670   | 596    | 380   | 310   | 320   | 383   | 888   | 2020   | 1920   | 2410          | 1250  | 1180  |
| 23          | 667   | 567    | 380   | 320   | 347   | 371   | 1140  | 1850   | 1680   | 2680          | 1250  | 1160  |
| 24          | 661   | 577    | 380   | 330   | 340   | 375   | 1310  | 1660   | 1550   | 2480          | 1370  | 1140  |
| 25          | 661   | 589    | 390   | 340   | 330   | 379   | 1470  | 1700   | 1480   | 2250          | 1710  | 1100  |
| 26          | 654   | 580    | 380   | 355   | 310   | 387   | 1670  | 1620   | 1430   | 2130          | 1450  | 1070  |
| 27          | 651   | 580    | 380   | 370   | 300   | 383   | 2100  | 1520   | 1480   | 2030          | 1350  | 1060  |
| 28          | 648   | 580    | 360   | 390   | 300   | 391   | 2500  | 1600   | 1570   | 2330          | 1250  | 1060  |
| 29          | 646   | 580    | 360   | 390   | ---   | 371   | 2600  | 1940   | 1710   | 2330          | 1170  | 1050  |
| 30          | 630   | 580    | 360   | 360   | ---   | 383   | 2630  | 1880   | 1900   | 2210          | 1110  | 1040  |
| 31          | 640   | ---    | 360   | 330   | ---   | 424   | ---   | 1710   | ---    | 2110          | 1070  | ---   |
| TOTAL       | 20235 | 17865  | 12705 | 10725 | 9108  | 11954 | 30922 | 66910  | 64030  | 67510         | 45140 | 31210 |
| MEAN        | 653   | 596    | 410   | 346   | 325   | 386   | 1031  | 2158   | 2134   | 2178          | 1456  | 1040  |
| MAX         | 744   | 635    | 550   | 400   | 350   | 509   | 2630  | 3070   | 3600   | 3380          | 2050  | 1180  |
| MIN         | 611   | 550    | 350   | 280   | 300   | 300   | 450   | 1520   | 1220   | 1680          | 1070  | 761   |
| AC-FT       | 40140 | 35440  | 25200 | 21270 | 18070 | 23710 | 61330 | 132700 | 127000 | 133900        | 89540 | 61910 |
| CAL YR 1986 | TOTAL | 560409 |       | MEAN  | 1535  | MAX   | 9460  | MIN    | 200    | AC-FT 1112000 |       |       |
| WTR YR 1987 | TOTAL | 388314 |       | MEAN  | 1064  | MAX   | 3600  | MIN    | 280    | AC-FT 770200  |       |       |

WATER-QUALITY DATA

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | ARSENIC                           | BARIUM,                           | CADMIUM                           | CHRO-                                       | LEAD,                             | MERCURY                           | SELE-                                      | SILVER,                           |
|-----------|------|-----------------------------------|-----------------------------------|-----------------------------------|---------------------------------------------|-----------------------------------|-----------------------------------|--------------------------------------------|-----------------------------------|
|           |      | DIS-<br>SOLVED<br>(UG/L<br>AS AS) | DIS-<br>SOLVED<br>(UG/L<br>AS BA) | DIS-<br>SOLVED<br>(UG/L<br>AS CD) | M-IUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) | DIS-<br>SOLVED<br>(UG/L<br>AS PB) | DIS-<br>SOLVED<br>(UG/L<br>AS HG) | NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | DIS-<br>SOLVED<br>(UG/L<br>AS AG) |
| MAY 18... | 1540 | <1                                | 100                               | <1                                | <1                                          | <5                                | <0.1                              | <1                                         | <1                                |
| SEP 08... | 1140 | <1                                | <100                              | <1                                | <1                                          | <5                                | 0.2                               | 1                                          | <1                                |

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]



06227600 WIND RIVER NEAR KINNEAR, WY

LOCATION.--Lat 43°08'34", long 108°42'32", in SW1/4 SE1/4 SW1/4 sec.13, T.2 N., R.1 E., Fremont County, Hydrologic Unit 10080001, Wind River Indian Reservation, at upstream side of bridge on Wyoming State Secondary Highway 132, and 1.7 mi southwest of Kinnear.

DRAINAGE AREA.--2,194 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1984 to current year.

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>NATURAL<br>DIS-<br>SOLVED<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| OCT<br>03... | 1415 | 1090                                            | 6.0                                  | <2.0                                                       | 9.3                                                            | <0.6                                                            | 1.7                                                    |
| JAN<br>26... | 1200 | 360                                             | 0.0                                  | <3.0                                                       | 5.0                                                            | 0.5                                                             | 2.9                                                    |
| APR<br>17... | 1400 | 447                                             | 11.0                                 | <3.0                                                       | 4.0                                                            | <0.1                                                            | 1.8                                                    |
| JUL<br>27... | 1245 | 610                                             | 18.0                                 | <1.0                                                       | 2.0                                                            | <0.1                                                            | 1.1                                                    |

## YELLOWSTONE RIVER BASIN

06228000 WIND RIVER AT RIVERTON, WY

LOCATION.--Lat 43°00'38", long 108°22'32", in NE1/4 NW1/4 NW1/4 sec.2, T.1 S., R.4 E., Fremont County, Hydrologic Unit 10080001, Wind River Indian Reservation, on left bank 265 ft downstream from bridge on State Highway 789, 1.1 mi southeast of post office in Riverton, and 1.5 mi upstream from Little Wind River.

DRAINAGE AREA.--2,309 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to August 1906, August to December 1907, May to October 1908, May 1911 to current year. Monthly discharge only for some periods, published in WSP 1309. Published as Big Wind River near Arapahoe Agency 1906 and as Big Wind River near Riverton 1907-08.

REVISED RECORDS.--WSP 1509: 1935. WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,901.56 ft above National Geodetic Vertical Datum of 1929. See WSP 1729 for history of changes prior to Oct. 13, 1930. Oct. 13, 1930, to Apr. 15, 1968, water-stage recorder at site 280 ft upstream at datum 2.00 ft higher. Apr. 16 to Nov. 17, 1968, water-stage recorder at site 880 ft upstream at datum 2.00 ft higher. Nov. 18, 1968, to July 28, 1970, water-stage recorder at site 225 ft upstream at datum 2.00 ft higher. July 29, 1970, to Sept. 30, 1977, water-stage recorder at present site at datum 2.00 ft higher.

REMARKS.--Estimated daily discharges: Nov. 10 to Mar. 20. Records good except those for estimated daily discharges, which are poor. Some regulation by Bull Lake beginning in 1938 (see station 06224500) and Pilot Butte Reservoir beginning in 1926, combined capacity, 182,000 acre-ft. Diversions upstream from station for irrigation of about 128,000 acres upstream and downstream from station. The Wyoming canal of the Riverton project is the major diversion. This diversion began in 1926 and part of it can be returned to the river upstream from station through Pilot wasteway. Additional waste water returns to river downstream from station through Fivemile and Muddy Creeks.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft<sup>3</sup>/s, June 15, 1935, gage height, 10.15 ft, present datum, from rating curve extended above 7,200 ft<sup>3</sup>/s; maximum gage height, 10.80 ft, Dec. 30, 1983 (backwater from ice); minimum daily discharge, 9.8 ft<sup>3</sup>/s, May 28, July 16, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,690 ft<sup>3</sup>/s, June 9, gage height, 6.47 ft; maximum gage height, 8.79 ft, Dec. 17 (backwater from ice); minimum daily discharge, 67 ft<sup>3</sup>/s, May 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC    | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |    |       |  |        |
|-------------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|-------|--|--------|
| 1           | 344   | 667   | 500    | 280   | 400   | 440   | 397   | 1520  | 229   | 186   | 376   | 138   |    |       |  |        |
| 2           | 810   | 670   | 470    | 290   | 420   | 450   | 397   | 1430  | 272   | 175   | 344   | 120   |    |       |  |        |
| 3           | 726   | 622   | 450    | 300   | 440   | 470   | 406   | 1100  | 225   | 99    | 326   | 109   |    |       |  |        |
| 4           | 685   | 631   | 430    | 310   | 450   | 500   | 341   | 708   | 222   | 92    | 371   | 156   |    |       |  |        |
| 5           | 667   | 637   | 410    | 320   | 440   | 520   | 443   | 499   | 159   | 107   | 319   | 164   |    |       |  |        |
| 6           | 720   | 644   | 420    | 330   | 430   | 540   | 355   | 578   | 174   | 124   | 296   | 164   |    |       |  |        |
| 7           | 682   | 708   | 420    | 320   | 430   | 560   | 334   | 679   | 169   | 129   | 258   | 148   |    |       |  |        |
| 8           | 658   | 644   | 400    | 310   | 440   | 560   | 235   | 659   | 546   | 123   | 239   | 169   |    |       |  |        |
| 9           | 657   | 570   | 350    | 300   | 450   | 540   | 214   | 621   | 1560  | 134   | 229   | 160   |    |       |  |        |
| 10          | 678   | 500   | 300    | 290   | 470   | 520   | 189   | 480   | 1480  | 155   | 215   | 141   |    |       |  |        |
| 11          | 711   | 460   | 310    | 290   | 470   | 520   | 178   | 452   | 1120  | 450   | 199   | 138   |    |       |  |        |
| 12          | 694   | 440   | 330    | 300   | 460   | 520   | 208   | 425   | 888   | 513   | 188   | 132   |    |       |  |        |
| 13          | 647   | 470   | 330    | 320   | 460   | 540   | 228   | 383   | 816   | 330   | 172   | 129   |    |       |  |        |
| 14          | 661   | 520   | 300    | 320   | 470   | 560   | 214   | 397   | 978   | 192   | 172   | 102   |    |       |  |        |
| 15          | 677   | 620   | 300    | 320   | 480   | 540   | 217   | 334   | 932   | 170   | 180   | 96    |    |       |  |        |
| 16          | 647   | 660   | 300    | 290   | 480   | 500   | 300   | 355   | 895   | 150   | 187   | 105   |    |       |  |        |
| 17          | 628   | 640   | 290    | 270   | 470   | 480   | 489   | 293   | 1430  | 124   | 160   | 204   |    |       |  |        |
| 18          | 613   | 600   | 280    | 290   | 480   | 470   | 603   | 632   | 2190  | 393   | 169   | 239   |    |       |  |        |
| 19          | 643   | 590   | 280    | 300   | 500   | 480   | 683   | 733   | 1550  | 1170  | 135   | 260   |    |       |  |        |
| 20          | 726   | 590   | 290    | 300   | 490   | 450   | 615   | 360   | 1060  | 562   | 120   | 267   |    |       |  |        |
| 21          | 830   | 570   | 290    | 310   | 480   | 389   | 442   | 315   | 769   | 381   | 111   | 254   |    |       |  |        |
| 22          | 853   | 580   | 290    | 320   | 470   | 373   | 398   | 207   | 533   | 388   | 111   | 269   |    |       |  |        |
| 23          | 794   | 540   | 290    | 330   | 480   | 376   | 580   | 106   | 292   | 480   | 117   | 225   |    |       |  |        |
| 24          | 760   | 520   | 290    | 350   | 490   | 373   | 863   | 70    | 117   | 509   | 127   | 229   |    |       |  |        |
| 25          | 732   | 560   | 300    | 360   | 500   | 369   | 899   | 67    | 85    | 445   | 256   | 223   |    |       |  |        |
| 26          | 709   | 550   | 290    | 380   | 480   | 382   | 1010  | 69    | 104   | 399   | 214   | 221   |    |       |  |        |
| 27          | 695   | 500   | 310    | 400   | 460   | 377   | 1160  | 168   | 90    | 331   | 187   | 215   |    |       |  |        |
| 28          | 682   | 500   | 290    | 430   | 440   | 363   | 1390  | 122   | 80    | 337   | 227   | 217   |    |       |  |        |
| 29          | 681   | 530   | 290    | 430   | ---   | 358   | 1560  | 133   | 91    | 448   | 194   | 217   |    |       |  |        |
| 30          | 668   | 540   | 290    | 410   | ---   | 340   | 1570  | 255   | 81    | 458   | 149   | 219   |    |       |  |        |
| 31          | 662   | ---   | 290    | 400   | ---   | 384   | ---   | 201   | ---   | 360   | 137   | ---   |    |       |  |        |
| TOTAL       | 21340 | 17273 | 10380  | 10170 | 12930 | 14244 | 16918 | 14351 | 19137 | 9914  | 6485  | 5430  |    |       |  |        |
| MEAN        | 688   | 576   | 335    | 328   | 462   | 459   | 564   | 463   | 638   | 320   | 209   | 181   |    |       |  |        |
| MAX         | 853   | 708   | 500    | 430   | 500   | 560   | 1570  | 1520  | 2190  | 1170  | 376   | 269   |    |       |  |        |
| MIN         | 344   | 440   | 280    | 270   | 400   | 340   | 178   | 67    | 80    | 92    | 111   | 96    |    |       |  |        |
| AC-FT       | 42330 | 34260 | 20590  | 20170 | 25650 | 28250 | 33560 | 28470 | 37960 | 19660 | 12860 | 10770 |    |       |  |        |
| CAL YR 1986 | TOTAL |       | 291370 |       | MEAN  |       | 798   | MAX   |       | 6930  | MIN   |       | 53 | AC-FT |  | 577900 |
| WTR YR 1987 | TOTAL |       | 158572 |       | MEAN  |       | 434   | MAX   |       | 2190  | MIN   |       | 67 | AC-FT |  | 314500 |

06228000 WIND RIVER AT RIVERTON, WY--Continued  
(National stream-quality accounting network station)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947-58, 1960 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TUR-<br>BID-<br>ITY<br>(NTU) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------|
| NOV<br>12... | 1115 | 443                                             | 395                                               | 8.4                            | 1.7                          | 0.0                                  | 549                                                  | 12.4                                | 118                                                            | K3                                                             | 37                                                                 |
| JAN<br>12... | 1430 | 300                                             | 500                                               | 8.0                            | 0.60                         | 0.0                                  | 640                                                  | 12.4                                | 101                                                            | 120                                                            | K28                                                                |
| MAR<br>12... | 1330 | 520                                             | 420                                               | 8.2                            | 63                           | 0.0                                  | 640                                                  | 12.9                                | 105                                                            | K14                                                            | 790                                                                |
| MAY<br>26... | 1400 | 67                                              | 645                                               | 8.8                            | 3.0                          | 17.0                                 | 639                                                  | 8.2                                 | 102                                                            | 59                                                             | 220                                                                |
| JUN<br>26... | 1255 | 82                                              | --                                                | --                             | --                           | 22.5                                 | --                                                   | --                                  | --                                                             | --                                                             | --                                                                 |
| JUL<br>29... | 1000 | 542                                             | 490                                               | 8.0                            | 450                          | 21.0                                 | 637                                                  | 7.4                                 | 100                                                            | 2200                                                           | 2000                                                               |
| SEP<br>08... | 1100 | 148                                             | 400                                               | 8.0                            | 3.3                          | 18.0                                 | 640                                                  | 10.4                                | 131                                                            | 48                                                             | 130                                                                |

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

| DATE         | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | ALKA-<br>LINITY,<br>CARBON-<br>ATE<br>IT-FLD<br>(MG/L<br>CACO3) | BICAR-<br>BONATE<br>WH WAT<br>TOTAL<br>FIELD<br>MG/L AS<br>HCO3 | CAR-<br>BONATE<br>WH WAT<br>TOTAL<br>FIELD<br>MG/L AS<br>CO3 |
|--------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|
| NOV<br>12... | 180                                    | 49                                           | 14                                                   | 22                                           | 0.7                                     | 2.5                                                 | 161                                             | 160                                                             | 180                                                             | 10                                                           |
| JAN<br>12... | 210                                    | 59                                           | 16                                                   | 24                                           | 0.7                                     | 2.9                                                 | 188                                             | 208                                                             | 250                                                             | 0                                                            |
| MAR<br>12... | 170                                    | 48                                           | 13                                                   | 25                                           | 0.9                                     | 3.0                                                 | 156                                             | 162                                                             | 200                                                             | 0                                                            |
| MAY<br>26... | 150                                    | 41                                           | 12                                                   | 37                                           | 1                                       | 2.0                                                 | 122                                             | 121                                                             | 98                                                              | 25                                                           |
| JUN<br>26... | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                              | --                                                              | --                                                              | --                                                           |
| JUL<br>29... | 87                                     | 24                                           | 6.6                                                  | 14                                           | 0.7                                     | 1.9                                                 | 103                                             | 150                                                             | 183                                                             | 0                                                            |
| SEP<br>08... | 150                                    | 41                                           | 11                                                   | 29                                           | 1                                       | 2.5                                                 | 137                                             | 128                                                             | 160                                                             | 0                                                            |

| DATE         | CARBON<br>DIOXIDE<br>DIS-<br>SOLVED<br>(MG/L<br>AS CO2) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) |
|--------------|---------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|
| NOV<br>12... | 1.1                                                     | 61                                            | 4.3                                                 | 0.3                                                | 15                                                | 259                                                                | 280                                                            | 0.35                                                | 310                                               | --                                                   | <0.1                                                          |
| JAN<br>12... | 4.0                                                     | 67                                            | 5.0                                                 | 0.3                                                | 18                                                | 303                                                                | 320                                                            | 0.41                                                | 245                                               | --                                                   | 0.2                                                           |
| MAR<br>12... | 2.0                                                     | 67                                            | 5.3                                                 | 0.3                                                | 16                                                | 268                                                                | 280                                                            | 0.36                                                | 376                                               | --                                                   | 0.1                                                           |
| MAY<br>26... | 0.2                                                     | 95                                            | 4.9                                                 | 0.3                                                | 7.8                                               | 284                                                                | 300                                                            | 0.39                                                | 51                                                | <0.1                                                 | <0.1                                                          |
| JUN<br>26... | --                                                      | --                                            | --                                                  | --                                                 | --                                                | --                                                                 | --                                                             | --                                                  | --                                                | <0.1                                                 | --                                                            |
| JUL<br>29... | 2.0                                                     | 31                                            | 2.1                                                 | 0.2                                                | 11                                                | 235                                                                | 150                                                            | 0.32                                                | 344                                               | --                                                   | <0.1                                                          |
| SEP<br>08... | 2.5                                                     | 68                                            | 7.5                                                 | 0.3                                                | 8.3                                               | 249                                                                | 240                                                            | 0.34                                                | 100                                               | --                                                   | <0.1                                                          |

## YELLOWSTONE RIVER BASIN

06228000 WIND RIVER AT RIVERTON, WY--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS NH4) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | SEDI-<br>MENT,<br>SUS-<br>PENDEED<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDEED<br>(T/DAY) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|--------------|------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------|
| NOV<br>12... | <0.01                                                | <0.01                                                         | --                                                              | --                                                   | <0.2                                                               | 0.02                                        | 0.01                                                 | <0.01                                                          | 44                                          | 53                                                              | --                                                            |
| JAN<br>12... | 0.03                                                 | 0.03                                                          | 0.04                                                            | 0.37                                                 | 0.4                                                                | 0.01                                        | <0.01                                                | <0.01                                                          | 8                                           | 6.5                                                             | --                                                            |
| MAR<br>12... | 0.04                                                 | 0.07                                                          | 0.09                                                            | 0.96                                                 | 1.0                                                                | 0.29                                        | 0.03                                                 | 0.02                                                           | 222                                         | 312                                                             | 89                                                            |
| MAY<br>26... | 0.02                                                 | 0.03                                                          | 0.04                                                            | 0.88                                                 | 0.9                                                                | 0.06                                        | 0.02                                                 | <0.01                                                          | 10                                          | 1.8                                                             | 98                                                            |
| JUN<br>26... | 0.01                                                 | --                                                            | --                                                              | 0.59                                                 | 0.6                                                                | 0.04                                        | --                                                   | --                                                             | --                                          | --                                                              | --                                                            |
| JUL<br>29... | <0.01                                                | 0.02                                                          | 0.03                                                            | --                                                   | 2.5                                                                | 1.4                                         | 0.03                                                 | 0.02                                                           | 2070                                        | 3030                                                            | 100                                                           |
| SEP<br>08... | 0.03                                                 | 0.05                                                          | 0.06                                                            | 0.37                                                 | 0.4                                                                | 0.01                                        | <0.01                                                | <0.01                                                          | 19                                          | 7.6                                                             | 19                                                            |

| DATE         | TIME | ALUM-<br>INUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AL) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BERYL-<br>LIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BE) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) | COBALT,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CO) | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) |
|--------------|------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|--------------------------------------------|
| NOV<br>12... | 1115 | <10                                                 | 1                                            | 75                                           | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 4                                            | 7                                          | <5                                         |
| MAR<br>12... | 1330 | 50                                                  | 1                                            | 72                                           | <0.5                                                 | 1                                            | <1                                                  | <3                                           | 4                                            | 120                                        | <5                                         |
| JUL<br>29... | 1000 | 60                                                  | 4                                            | 68                                           | <0.5                                                 | 2                                            | <1                                                  | <3                                           | 3                                            | 43                                         | <5                                         |
| SEP<br>08... | 1100 | 30                                                  | 3                                            | 71                                           | <0.5                                                 | <1                                           | 3                                                   | <3                                           | 3                                            | 21                                         | <5                                         |

| DATE         | LITHIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS LI) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | STRON-<br>TIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SR) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|--------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------------|--------------------------------------------|
| NOV<br>12... | 16                                           | 9                                                    | --                                           | <10                                                   | 1                                            | <1                                                  | <1                                           | 260                                                  | <6                                                 | 15                                         |
| MAR<br>12... | 15                                           | 16                                                   | 0.3                                          | <10                                                   | 4                                            | <1                                                  | <1                                           | 270                                                  | <6                                                 | 14                                         |
| JUL<br>29... | 9                                            | 21                                                   | 0.3                                          | <10                                                   | <1                                           | <1                                                  | <1                                           | 150                                                  | <6                                                 | 15                                         |
| SEP<br>08... | 10                                           | 6                                                    | 0.2                                          | <10                                                   | 1                                            | <1                                                  | <1                                           | 260                                                  | <6                                                 | 9                                          |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>NATURAL<br>DIS-<br>SOLVED<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| OCT<br>03... | 1200 | 669                                             | 7.0                                  | --                                                  | 2.7                                                        | 5.2                                                            | 0.6                                                             | 3.2                                                    |
| JAN<br>12... | 1430 | 300                                             | 0.0                                  | 2.9                                                 | <4.0                                                       | 6.7                                                            | <0.2                                                            | 3.7                                                    |
| APR<br>20... | 1340 | 603                                             | 10.0                                 | --                                                  | <3.0                                                       | 4.9                                                            | 0.7                                                             | 3.2                                                    |
| JUL<br>29... | 1000 | 542                                             | 21.0                                 | 1.9                                                 | <1.0                                                       | 2.9                                                            | <0.2                                                            | 2.9                                                    |

06228350 SOUTH FORK LITTLE WIND RIVER ABOVE WASHAKIE RESERVOIR, NEAR FORT WASHAKIE, WY

LOCATION.--Lat 42°58'06", long 109°02'13", in SE1/4 SW1/4 SE1/4 sec.18, T.1 S., R.2 W., Fremont County, Hydrologic Unit 10080002, Wind River Indian Reservation, on right bank 1.9 mi upstream from Washakie Dam and 8.0 mi southwest of Fort Washakie.

DRAINAGE AREA.--90.3 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,440 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 23, Dec. 10-11, Jan. 7-23, Jan. 29 to Feb. 2, and Feb. 26 to Mar. 1. Records good except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--11 years, 131 ft<sup>3</sup>/s, 94,910 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,080 ft<sup>3</sup>/s, June 9, 1981, gage height, 8.21 ft; minimum daily, 4.5 ft<sup>3</sup>/s, Feb. 1-9, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 740 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| May 18 | 0300 | 873                               | 5.66                | July 11 | 0300 | 873                               | 5.66                |
| June 9 | 0900 | *900                              | *5.73               |         |      |                                   |                     |

Minimum daily discharge, 10 ft<sup>3</sup>/s, Jan. 16

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|-------|------|------|------|------|------|-------|-------|-------|--------|------|
| 1           | 41    | 50    | 28   | 13   | 13   | 13   | 22   | 439   | 233   | 253   | 152    | 69   |
| 2           | 45    | 34    | 28   | 13   | 13   | 13   | 21   | 359   | 200   | 228   | 141    | 66   |
| 3           | 46    | 45    | 26   | 13   | 13   | 13   | 22   | 261   | 187   | 217   | 130    | 65   |
| 4           | 43    | 37    | 26   | 14   | 13   | 13   | 25   | 227   | 201   | 203   | 119    | 86   |
| 5           | 44    | 38    | 27   | 15   | 13   | 13   | 28   | 247   | 255   | 189   | 110    | 94   |
| 6           | 43    | 38    | 26   | 15   | 13   | 15   | 33   | 287   | 315   | 172   | 103    | 86   |
| 7           | 44    | 32    | 25   | 14   | 13   | 15   | 35   | 330   | 433   | 160   | 102    | 80   |
| 8           | 43    | 31    | 23   | 13   | 13   | 15   | 41   | 376   | 713   | 148   | 103    | 75   |
| 9           | 44    | 29    | 22   | 12   | 13   | 14   | 38   | 462   | 849   | 159   | 96     | 70   |
| 10          | 44    | 25    | 21   | 11   | 13   | 13   | 32   | 469   | 749   | 339   | 91     | 66   |
| 11          | 45    | 31    | 22   | 12   | 12   | 13   | 39   | 452   | 627   | 759   | 88     | 63   |
| 12          | 39    | 32    | 23   | 13   | 12   | 13   | 35   | 475   | 554   | 508   | 84     | 61   |
| 13          | 46    | 31    | 23   | 14   | 12   | 16   | 28   | 507   | 525   | 370   | 79     | 58   |
| 14          | 45    | 35    | 22   | 13   | 12   | 16   | 32   | 497   | 500   | 292   | 79     | 55   |
| 15          | 43    | 34    | 21   | 13   | 12   | 16   | 51   | 534   | 477   | 256   | 122    | 53   |
| 16          | 41    | 31    | 21   | 10   | 13   | 17   | 64   | 581   | 523   | 234   | 128    | 52   |
| 17          | 39    | 32    | 20   | 11   | 12   | 18   | 68   | 660   | 461   | 249   | 108    | 50   |
| 18          | 39    | 33    | 19   | 11   | 12   | 18   | 99   | 835   | 385   | 368   | 94     | 48   |
| 19          | 48    | 38    | 20   | 11   | 12   | 19   | 88   | 673   | 329   | 346   | 84     | 47   |
| 20          | 72    | 36    | 20   | 11   | 13   | 19   | 63   | 539   | 291   | 269   | 76     | 45   |
| 21          | 70    | 36    | 19   | 12   | 13   | 18   | 59   | 479   | 271   | 242   | 72     | 42   |
| 22          | 91    | 35    | 19   | 12   | 13   | 18   | 80   | 421   | 269   | 412   | 71     | 42   |
| 23          | 80    | 35    | 19   | 12   | 12   | 18   | 114  | 331   | 250   | 347   | 73     | 40   |
| 24          | 70    | 34    | 18   | 13   | 13   | 18   | 139  | 310   | 220   | 279   | 90     | 39   |
| 25          | 64    | 32    | 16   | 13   | 13   | 18   | 173  | 300   | 202   | 235   | 105    | 38   |
| 26          | 59    | 29    | 16   | 13   | 12   | 18   | 202  | 265   | 196   | 210   | 98     | 37   |
| 27          | 61    | 30    | 16   | 13   | 11   | 19   | 231  | 241   | 195   | 207   | 91     | 34   |
| 28          | 59    | 28    | 16   | 14   | 12   | 19   | 273  | 225   | 198   | 207   | 85     | 33   |
| 29          | 53    | 27    | 15   | 13   | ---  | 19   | 312  | 241   | 218   | 187   | 78     | 33   |
| 30          | 53    | 28    | 15   | 12   | ---  | 20   | 390  | 247   | 268   | 175   | 74     | 33   |
| 31          | 45    | ---   | 14   | 13   | ---  | 21   | ---  | 235   | ---   | 163   | 71     | ---  |
| TOTAL       | 1599  | 1006  | 646  | 392  | 351  | 508  | 2837 | 12505 | 11094 | 8383  | 2997   | 1660 |
| MEAN        | 51.6  | 33.5  | 20.8 | 12.6 | 12.5 | 16.4 | 94.6 | 403   | 370   | 270   | 96.7   | 55.3 |
| MAX         | 91    | 50    | 28   | 15   | 13   | 21   | 390  | 835   | 849   | 759   | 152    | 94   |
| MIN         | 39    | 25    | 14   | 10   | 11   | 13   | 21   | 225   | 187   | 148   | 71     | 33   |
| AC-FT       | 3170  | 2000  | 1280 | 778  | 696  | 1010 | 5630 | 24800 | 22000 | 16630 | 5940   | 3290 |
| CAL YR 1986 | TOTAL | 68812 |      | MEAN | 189  | MAX  | 1470 | MIN   | 14    | AC-FT | 136500 |      |
| WTR YR 1987 | TOTAL | 43978 |      | MEAN | 120  | MAX  | 849  | MIN   | 10    | AC-FT | 87230  |      |



## YELLOWSTONE RIVER BASIN

06228350 SOUTH FORK LITTLE WIND RIVER ABOVE WASHAKIE RESERVOIR, NEAR FORT WASHAKIE, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|
| OCT<br>06... | 0900 | 44                                              | 66                                                | 5.0                                  | 28                                     | 7.2                                          | 2.4                                                  | 2.4                                          | 0.2                                     | 0.2                                                 |
| DEC<br>16... | 1015 | 21                                              | 64                                                | 0.0                                  | 38                                     | 9.9                                          | 3.2                                                  | 3.6                                          | 0.3                                     | 0.6                                                 |
| JAN<br>28... | 1130 | 15                                              | 138                                               | 0.5                                  | 48                                     | 12                                           | 4.3                                                  | 4.6                                          | 0.3                                     | 0.6                                                 |
| APR<br>13... | 1135 | 25                                              | 125                                               | 3.0                                  | 48                                     | 13                                           | 3.8                                                  | 4.2                                          | 0.3                                     | 0.7                                                 |
| JUN<br>04... | 1420 | 199                                             | 36                                                | 7.5                                  | 15                                     | 4.0                                          | 1.1                                                  | 1.8                                          | 0.2                                     | 0.3                                                 |
| AUG<br>07... | 1100 | 100                                             | 44                                                | 15.0                                 | 21                                     | 6.1                                          | 1.3                                                  | 1.8                                          | 0.2                                     | 0.3                                                 |

| DATE         | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|
| OCT<br>06... | 29                                              | 2.6                                           | 3.0                                                 | 0.1                                                | 4.0                                               | 39                                                                  | 0.05                                                | 4.7                                               | <0.1                                                          | 0.04                                        |
| DEC<br>16... | 29                                              | 1.7                                           | 6.9                                                 | 0.1                                                | 6.5                                               | 50                                                                  | 0.07                                                | 2.8                                               | 0.2                                                           | 0.01                                        |
| JAN<br>28... | 39                                              | 1.7                                           | 9.6                                                 | 0.2                                                | 7.6                                               | 64                                                                  | 0.09                                                | 2.6                                               | 0.2                                                           | 0.01                                        |
| APR<br>13... | 43                                              | 2.8                                           | 9.0                                                 | 0.1                                                | 9.1                                               | 68                                                                  | 0.09                                                | 4.6                                               | 0.1                                                           | 0.01                                        |
| JUN<br>04... | 13                                              | <1.0                                          | 1.4                                                 | 0.1                                                | 4.0                                               | 20                                                                  | 0.03                                                | 11                                                | <0.1                                                          | 0.01                                        |
| AUG<br>07... | 17                                              | 1.3                                           | 1.9                                                 | <0.1                                               | 3.6                                               | 26                                                                  | 0.04                                                | 7.2                                               | <0.1                                                          | 0.01                                        |

## 06231000 LITTLE WIND RIVER ABOVE ARAPAHOE, WY

LOCATION.--Lat 42°57'35", long 108°29'51", in NW1/4 NW1/4 SW1/4 sec.23, T.1 S., R.3 E., Fremont County, Hydrologic Unit 10080002, Wind River Indian Reservation, on left bank 0.4 mi southwest of Arapahoe school, 1.2 mi upstream from Popo Agie River, and 5.4 mi downstream from Seventeen Mile bridge.

DRAINAGE AREA.--660 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1906 to December 1909, May 1911 to November 1918, October 1979 to current year. Prior to October 1979, intermittent record. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 4,990 ft above National Geodetic Vertical Datum of 1929, from topographic map. May 1906 to December 1909, nonrecording gage 300 ft upstream at different datum, and May 1911 to November 1918, nonrecording gage 0.3 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 11 to Mar. 15. Records fair except those for estimated daily discharges, which are poor. Some regulation by Washakie Reservoir, 34 mi upstream, capacity 7,940 acre-ft, and return flow from irrigation. Diversions for irrigation of about 26,000 acres upstream from station.

AVERAGE DISCHARGE.--8 years (water years 1980-87), 213 ft<sup>3</sup>/s, 154,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 3,840 ft<sup>3</sup>/s, June 17, 1911, gage height, 6.60 ft, datum then in use; maximum gage height, 12.15 ft, June 10, 1981, June 13, 1983; minimum daily discharge recorded, 14 ft<sup>3</sup>/s, May 18, 1982.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| June 10 | 1000 | *1,530                         | *10.39           | No other peak greater than base discharge. |      |                                |                  |

Minimum daily discharge, 35 ft<sup>3</sup>/s, Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR  | MAY   | JUN   | JUL    | AUG  | SEP  |
|-------------|-------|--------|------|------|------|------|------|-------|-------|--------|------|------|
| 1           | 105   | 183    | 100  | 76   | 64   | 80   | 121  | 231   | 336   | 51     | 113  | 61   |
| 2           | 267   | 180    | 100  | 78   | 68   | 90   | 112  | 303   | 308   | 70     | 97   | 56   |
| 3           | 328   | 179    | 110  | 80   | 64   | 100  | 99   | 498   | 277   | 87     | 82   | 56   |
| 4           | 249   | 176    | 110  | 80   | 64   | 120  | 103  | 470   | 237   | 99     | 66   | 68   |
| 5           | 217   | 171    | 120  | 80   | 64   | 140  | 115  | 404   | 229   | 104    | 57   | 92   |
| 6           | 211   | 170    | 120  | 84   | 66   | 170  | 128  | 417   | 233   | 98     | 45   | 92   |
| 7           | 207   | 170    | 120  | 84   | 70   | 200  | 132  | 426   | 308   | 79     | 42   | 81   |
| 8           | 203   | 170    | 110  | 78   | 70   | 220  | 131  | 469   | 673   | 60     | 49   | 75   |
| 9           | 203   | 160    | 100  | 70   | 70   | 220  | 129  | 510   | 1190  | 46     | 66   | 69   |
| 10          | 203   | 130    | 94   | 62   | 74   | 210  | 118  | 648   | 1470  | 42     | 63   | 65   |
| 11          | 203   | 120    | 100  | 62   | 74   | 200  | 105  | 696   | 1210  | 296    | 57   | 60   |
| 12          | 206   | 160    | 110  | 62   | 70   | 210  | 105  | 635   | 991   | 966    | 49   | 52   |
| 13          | 209   | 150    | 110  | 64   | 70   | 220  | 105  | 621   | 840   | 724    | 52   | 52   |
| 14          | 210   | 150    | 100  | 64   | 70   | 220  | 105  | 617   | 759   | 439    | 52   | 50   |
| 15          | 210   | 160    | 100  | 60   | 74   | 210  | 100  | 568   | 685   | 291    | 53   | 51   |
| 16          | 204   | 150    | 100  | 56   | 74   | 200  | 98   | 593   | 592   | 217    | 60   | 44   |
| 17          | 194   | 140    | 100  | 56   | 74   | 167  | 102  | 938   | 574   | 140    | 58   | 43   |
| 18          | 189   | 140    | 92   | 58   | 76   | 118  | 113  | 1060  | 499   | 145    | 54   | 43   |
| 19          | 187   | 150    | 100  | 60   | 82   | 124  | 141  | 1140  | 401   | 228    | 50   | 44   |
| 20          | 190   | 150    | 100  | 60   | 84   | 122  | 158  | 892   | 308   | 248    | 50   | 43   |
| 21          | 206   | 140    | 110  | 62   | 84   | 113  | 138  | 790   | 258   | 205    | 42   | 44   |
| 22          | 225   | 130    | 110  | 62   | 84   | 108  | 129  | 698   | 226   | 178    | 44   | 44   |
| 23          | 246   | 130    | 110  | 62   | 84   | 105  | 131  | 613   | 196   | 293    | 50   | 38   |
| 24          | 228   | 120    | 120  | 66   | 84   | 99   | 163  | 485   | 159   | 287    | 60   | 38   |
| 25          | 215   | 120    | 110  | 66   | 80   | 96   | 172  | 551   | 109   | 239    | 84   | 36   |
| 26          | 209   | 110    | 110  | 66   | 78   | 94   | 175  | 461   | 76    | 214    | 86   | 35   |
| 27          | 205   | 110    | 100  | 66   | 70   | 94   | 197  | 373   | 61    | 166    | 82   | 36   |
| 28          | 203   | 110    | 100  | 66   | 76   | 94   | 209  | 365   | 48    | 131    | 75   | 37   |
| 29          | 201   | 110    | 100  | 66   | ---  | 88   | 225  | 373   | 44    | 141    | 74   | 40   |
| 30          | 195   | 110    | 94   | 64   | ---  | 72   | 245  | 400   | 51    | 148    | 67   | 36   |
| 31          | 188   | ---    | 78   | 64   | ---  | 87   | ---  | 376   | ---   | 127    | 67   | ---  |
| TOTAL       | 6516  | 4349   | 3238 | 2084 | 2062 | 4391 | 4104 | 17621 | 13348 | 6559   | 1946 | 1581 |
| MEAN        | 210   | 145    | 104  | 67.2 | 73.6 | 142  | 137  | 568   | 445   | 212    | 62.8 | 52.7 |
| MAX         | 328   | 183    | 120  | 84   | 84   | 220  | 245  | 1140  | 1470  | 966    | 113  | 92   |
| MIN         | 105   | 110    | 78   | 56   | 64   | 72   | 98   | 231   | 44    | 42     | 42   | 35   |
| AC-FT       | 12920 | 8630   | 6420 | 4130 | 4090 | 8710 | 8140 | 34950 | 26480 | 13010  | 3860 | 3140 |
| CAL YR 1986 | TOTAL | 110406 | MEAN | 302  | MAX  | 2690 | MIN  | 51    | AC-FT | 219000 |      |      |
| WTR YR 1987 | TOTAL | 67799  | MEAN | 186  | MAX  | 1470 | MIN  | 35    | AC-FT | 134500 |      |      |

## YELLOWSTONE RIVER BASIN

06231000 LITTLE WIND RIVER ABOVE ARAPAHOE, WY--Continued

## WATER-QUALITY DATA

PERIOD OF RECORD.--Water years 1966 to current year.

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>NATURAL<br>DIS-<br>SOLVED<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| OCT<br>03... | 1010 | 352                                             | 6.0                                  | 12                                                         | 17                                                             | 0.9                                                             | 6.3                                                    |
| JAN<br>28... | 1030 | 65                                              | 0.0                                  | <5.0                                                       | 6.8                                                            | 0.6                                                             | 4.3                                                    |
| APR<br>16... | 1015 | 96                                              | 11.5                                 | <5.0                                                       | 7.2                                                            | 0.8                                                             | 7.8                                                    |
| JUL<br>28... | 1025 | 101                                             | 25.0                                 | <2.0                                                       | 4.1                                                            | 0.2                                                             | 2.6                                                    |

## 06232600 POPO AGIE RIVER AT HUDSON SIDING, NEAR LANDER, WY

LOCATION.--Lat 42°51'59", long 108°41'04", in NW1/4 NE1/4 sec.30, T.2 S., R.2 E., Fremont County, Hydrologic Unit 10080003, Wind River Indian Reservation, on left bank at bridge on private road, 1.2 mi downstream from North Popo Agie River, and 3.2 mi northeast of Lander.

PERIOD OF RECORD.--October 1984 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>06... | 1040 | 145                                             | 650                                               | 8.2                            | 5.0                                  | 626                                                  | 10.7                                |
| JAN<br>28... | 1340 | 75                                              | 580                                               | 8.5                            | 0.0                                  | 612                                                  | 15.9                                |
| APR<br>13... | 1430 | 129                                             | 680                                               | 8.5                            | 8.5                                  | 635                                                  | 19.0                                |
| JUL<br>01... | 1400 | 250                                             | 400                                               | 7.9                            | 18.0                                 | 631                                                  | 8.4                                 |

| DATE         | TIME | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>06... | 102  | K45                                                            | <0.1                                                           | <0.01                                                | --                                                   | <0.2                                                 | 0.04                                                               |                                             |
| JAN<br>28... | 136  | 210                                                            | 0.4                                                            | 0.42                                                 | 0.98                                                 | 1.4                                                  | 0.11                                                               |                                             |
| APR<br>13... | 196  | <1                                                             | 0.2                                                            | 0.04                                                 | 0.66                                                 | 0.7                                                  | 0.12                                                               |                                             |
| JUL<br>01... | 108  | 120                                                            | <0.1                                                           | 0.02                                                 | 0.58                                                 | 0.6                                                  | 0.10                                                               |                                             |

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

06233000 LITTLE POPO AGIE RIVER NEAR LANDER, WY

LOCATION.--Lat 42°43'00", long 108°38'34", in NE1/4 SE1/4 sec.27, T.32 N., R.99 W., Fremont County, Hydrologic Unit 10080003, on left bank 700 ft downstream from bridge on State Highway 28, 2.5 mi downstream from Red Canyon Creek, and 9.5 mi southeast of post office in Lander.

DRAINAGE AREA.--125 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1946 to current year (no winter records since 1971).

REVISED RECORDS.--WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,436.49 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharge. Records good. Diversions for irrigation of about 540 acres upstream from station. Slight regulation by Christina Lake, capacity, about 3,860 acre-ft.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--25 years (water years 1947-71), 80.3 ft<sup>3</sup>/s, 58,180 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,010 ft<sup>3</sup>/s, June 16, 1963, gage height, 6.64 ft; minimum daily, 12 ft<sup>3</sup>/s, Jan. 20, 21, Feb. 26 to Mar. 2, 1960, Jan. 10, 11, 18, 19, 1963.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| May 18 | 1800 | *526                              | *4.02               | June 8 | 1100 | 383                               | 3.76                |

Minimum daily discharge during period of operation, 30 ft<sup>3</sup>/s, Apr. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR  | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|------|-------|-------|------|------|------|
| 1     |     |     |     |     |     |     | 32   | 279   | 184   | 98   | 47   | 40   |
| 2     |     |     |     |     |     |     | 30   | 272   | 172   | 91   | 45   | 40   |
| 3     |     |     |     |     |     |     | 32   | 227   | 161   | 85   | 42   | 40   |
| 4     |     |     |     |     |     |     | 38   | 209   | 158   | 83   | 40   | 56   |
| 5     |     |     |     |     |     |     | 45   | 209   | 169   | 80   | 39   | 71   |
| 6     |     |     |     |     |     |     | 53   | 227   | 187   | 74   | 38   | 67   |
| 7     |     |     |     |     |     |     | 62   | 242   | 230   | 71   | 42   | 64   |
| 8     |     |     |     |     |     |     | 72   | 249   | 347   | 65   | 45   | 62   |
| 9     |     |     |     |     |     |     | 74   | 258   | 324   | 62   | 41   | 60   |
| 10    |     |     |     |     |     |     | 57   | 268   | 314   | 80   | 39   | 57   |
| 11    |     |     |     |     |     |     | 69   | 279   | 272   | 166  | 38   | 57   |
| 12    |     |     |     |     |     |     | 78   | 303   | 242   | 126  | 38   | 57   |
| 13    |     |     |     |     |     |     | 54   | 314   | 227   | 103  | 36   | 56   |
| 14    |     |     |     |     |     |     | 51   | 306   | 215   | 85   | 36   | 53   |
| 15    |     |     |     |     |     |     | 69   | 324   | 209   | 74   | 48   | 50   |
| 16    |     |     |     |     |     |     | 105  | 332   | 204   | 69   | 51   | 50   |
| 17    |     |     |     |     |     |     | 145  | 379   | 193   | 69   | 45   | 50   |
| 18    |     |     |     |     |     |     | 196  | 472   | 172   | 100  | 40   | 50   |
| 19    |     |     |     |     |     |     | 150  | 408   | 158   | 87   | 36   | 50   |
| 20    |     |     |     |     |     |     | 87   | 324   | 145   | 74   | 34   | 48   |
| 21    |     |     |     |     |     |     | 78   | 300   | 132   | 65   | 33   | 48   |
| 22    |     |     |     |     |     |     | 115  | 262   | 126   | 69   | 34   | 48   |
| 23    |     |     |     |     |     |     | 158  | 221   | 118   | 62   | 47   | 46   |
| 24    |     |     |     |     |     |     | 169  | 209   | 113   | 59   | 59   | 46   |
| 25    |     |     |     |     |     |     | 172  | 218   | 105   | 54   | 65   | 45   |
| 26    |     |     |     |     |     |     | 181  | 198   | 98    | 54   | 56   | 45   |
| 27    |     |     |     |     |     |     | 198  | 184   | 93    | 53   | 50   | 44   |
| 28    |     |     |     |     |     |     | 212  | 175   | 91    | 51   | 47   | 44   |
| 29    |     |     |     |     |     |     | 236  | 193   | 103   | 48   | 45   | 44   |
| 30    |     |     |     |     |     |     | 249  | 184   | 100   | 48   | 42   | 44   |
| 31    |     |     |     |     |     |     | ---  | 175   | ---   | 48   | 41   | ---  |
| TOTAL |     |     |     |     |     |     | 3267 | 8200  | 5362  | 2353 | 1339 | 1532 |
| MEAN  |     |     |     |     |     |     | 109  | 265   | 179   | 75.9 | 43.2 | 51.1 |
| MAX   |     |     |     |     |     |     | 249  | 472   | 347   | 166  | 65   | 71   |
| MIN   |     |     |     |     |     |     | 30   | 175   | 91    | 48   | 33   | 40   |
| AC-FT |     |     |     |     |     |     | 6480 | 16260 | 10640 | 4670 | 2660 | 3040 |

## YELLOWSTONE RIVER BASIN

06233900 POPO AGIE RIVER NEAR ARAPAHOE, WY

LOCATION.--Lat 42°56'47", long 108°30'34", in NE1/4 NE1/4 SW1/4 sec.27, T.1 S., R.3 E., Fremont County, Hydrologic Unit 10080003, Wind River Indian Reservation, on left bank 1.4 mi southwest of Arapahoe school and 3.0 mi upstream from Little Wind River.

## WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 4,995.72 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 10-20 and Dec. 2 to Mar. 19. Records fair except those for November to March, which are poor. Diversions for irrigation of about 36,900 acres upstream from station.

AVERAGE DISCHARGE.--8 years, 381 ft<sup>3</sup>/s, 276,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD: Maximum discharge, 4,240 ft<sup>3</sup>/s, June 12, 1983, gage height, 9.93 ft; minimum daily, 28 ft<sup>3</sup>/s, Aug. 6, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                 | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------------------------------------|------|-----------------------------------|---------------------|
| Mar. 14 | 0600 | (a)                               | *9.11               | No peak greater than base discharge. |      |                                   |                     |
| May 19  | 0700 | *1,810                            | 6.82                |                                      |      |                                   |                     |

a Backwater from ice.

Minimum daily discharge, 90 ft<sup>3</sup>/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR   | APR   | MAY   | JUN   | JUL   | AUG    | SEP   |
|-------------|-------|--------|------|------|------|-------|-------|-------|-------|-------|--------|-------|
| 1           | 175   | 208    | 134  | 110  | 110  | 100   | 260   | 1280  | 565   | 363   | 181    | 220   |
| 2           | 239   | 209    | 130  | 110  | 120  | 120   | 182   | 1240  | 519   | 334   | 162    | 214   |
| 3           | 322   | 186    | 140  | 120  | 110  | 130   | 185   | 1030  | 459   | 317   | 145    | 210   |
| 4           | 265   | 213    | 140  | 120  | 110  | 150   | 223   | 905   | 427   | 301   | 132    | 231   |
| 5           | 253   | 199    | 150  | 120  | 110  | 180   | 277   | 934   | 438   | 301   | 112    | 284   |
| 6           | 242   | 205    | 150  | 130  | 110  | 220   | 365   | 957   | 496   | 286   | 106    | 278   |
| 7           | 236   | 214    | 150  | 130  | 120  | 260   | 436   | 1010  | 647   | 251   | 113    | 263   |
| 8           | 233   | 182    | 140  | 120  | 120  | 280   | 480   | 1050  | 1160  | 230   | 162    | 254   |
| 9           | 249   | 161    | 130  | 110  | 120  | 280   | 532   | 1070  | 1470  | 216   | 174    | 250   |
| 10          | 230   | 140    | 120  | 100  | 130  | 270   | 393   | 1120  | 1500  | 221   | 166    | 239   |
| 11          | 247   | 170    | 130  | 100  | 130  | 270   | 328   | 1030  | 1250  | 1030  | 154    | 233   |
| 12          | 234   | 230    | 140  | 100  | 120  | 270   | 400   | 1020  | 1080  | 898   | 138    | 222   |
| 13          | 225   | 200    | 140  | 110  | 120  | 280   | 364   | 1020  | 993   | 607   | 142    | 212   |
| 14          | 240   | 200    | 130  | 110  | 120  | 290   | 304   | 982   | 920   | 455   | 127    | 202   |
| 15          | 227   | 210    | 130  | 100  | 110  | 290   | 287   | 1000  | 855   | 367   | 177    | 188   |
| 16          | 218   | 200    | 130  | 90   | 110  | 280   | 391   | 1060  | 826   | 321   | 230    | 185   |
| 17          | 209   | 190    | 130  | 94   | 110  | 260   | 444   | 1250  | 770   | 333   | 212    | 186   |
| 18          | 205   | 190    | 120  | 96   | 110  | 250   | 572   | 1530  | 662   | 449   | 176    | 191   |
| 19          | 212   | 200    | 130  | 100  | 120  | 240   | 635   | 1660  | 571   | 466   | 148    | 190   |
| 20          | 241   | 190    | 130  | 100  | 120  | 227   | 452   | 1250  | 502   | 368   | 146    | 192   |
| 21          | 260   | 185    | 140  | 110  | 120  | 190   | 335   | 1170  | 456   | 290   | 127    | 190   |
| 22          | 369   | 177    | 140  | 110  | 120  | 184   | 336   | 1070  | 437   | 309   | 132    | 186   |
| 23          | 379   | 165    | 150  | 110  | 120  | 168   | 431   | 876   | 416   | 351   | 157    | 175   |
| 24          | 309   | 164    | 140  | 120  | 120  | 165   | 538   | 792   | 359   | 296   | 248    | 160   |
| 25          | 274   | 162    | 140  | 120  | 110  | 162   | 589   | 936   | 326   | 260   | 345    | 132   |
| 26          | 257   | 147    | 130  | 120  | 110  | 156   | 649   | 783   | 288   | 254   | 338    | 129   |
| 27          | 249   | 148    | 130  | 120  | 100  | 181   | 763   | 679   | 284   | 231   | 306    | 121   |
| 28          | 248   | 142    | 130  | 120  | 100  | 158   | 872   | 633   | 280   | 211   | 283    | 118   |
| 29          | 238   | 140    | 130  | 120  | ---  | 138   | 1010  | 645   | 330   | 198   | 260    | 116   |
| 30          | 230   | 147    | 120  | 110  | ---  | 136   | 1070  | 649   | 384   | 183   | 240    | 108   |
| 31          | 225   | ---    | 120  | 110  | ---  | 186   | ---   | 589   | ---   | 178   | 232    | ---   |
| TOTAL       | 7740  | 5474   | 4164 | 3440 | 3230 | 6471  | 14103 | 31220 | 19670 | 10875 | 5771   | 5879  |
| MEAN        | 250   | 182    | 134  | 111  | 115  | 209   | 470   | 1007  | 656   | 351   | 186    | 196   |
| MAX         | 379   | 230    | 150  | 130  | 130  | 290   | 1070  | 1660  | 1500  | 1030  | 345    | 284   |
| MIN         | 175   | 140    | 120  | 90   | 100  | 100   | 182   | 589   | 280   | 178   | 106    | 108   |
| AC-FT       | 15350 | 10860  | 8260 | 6820 | 6410 | 12840 | 27970 | 61920 | 39020 | 21570 | 11450  | 11660 |
| CAL YR 1986 | TOTAL | 202694 |      | MEAN | 555  | MAX   | 3800  | MIN   | 98    | AC-FT | 402000 |       |
| WTR YR 1987 | TOTAL | 118037 |      | MEAN | 323  | MAX   | 1660  | MIN   | 90    | AC-FT | 234100 |       |



06233900 POPO AGIE RIVER NEAR ARAPAHOE, WY--Continued

## WATER-QUALITY RECORDS

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

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>LAB<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) |
|--------------|------|-------------------------------------------------|----------------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|
| OCT<br>03... | 0855 | 355                                             | 942                                                      | 5.0                                  | 360                                    | 83                                           | 38                                                   | 79                                           | 2                                       | 3.3                                                 | 160                                             | 360                                           |
| JAN<br>28... | 1130 | 116                                             | 708                                                      | 0.0                                  | 300                                    | 72                                           | 29                                                   | 40                                           | 1                                       | 1.9                                                 | 160                                             | 210                                           |
| FEB<br>20... | 1350 | 122                                             | 1010                                                     | 0.0                                  | 390                                    | 88                                           | 42                                                   | 80                                           | 2                                       | 2.6                                                 | 180                                             | 370                                           |
| APR<br>14... | 1500 | 298                                             | 1270                                                     | 11.5                                 | 460                                    | 100                                          | 51                                                   | 110                                          | 2                                       | 3.5                                                 | 170                                             | 490                                           |
| MAY<br>28... | 1110 | 640                                             | --                                                       | 11.5                                 | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                              | --                                            |
| JUN<br>29... | 1500 | 342                                             | 608                                                      | 20.0                                 | 260                                    | 63                                           | 24                                                   | 34                                           | 1                                       | 2.0                                                 | 130                                             | 190                                           |
| AUG<br>11... | 1035 | 156                                             | 814                                                      | 19.5                                 | 340                                    | 84                                           | 31                                                   | 51                                           | 1                                       | 2.6                                                 | 180                                             | 250                                           |

| DATE         | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>03... | 8.9                                                 | 0.3                                                | 9.0                                               | 680                                                            | 0.92                                                | 649                                               | --                                                   | 0.3                                                           | --                                                   | --                                                   | --                                                                 | 0.14                                        |
| JAN<br>28... | 5.7                                                 | 0.3                                                | 11                                                | 470                                                            | 0.63                                                | 146                                               | --                                                   | 0.4                                                           | --                                                   | --                                                   | --                                                                 | 0.08                                        |
| FEB<br>20... | 8.2                                                 | 0.2                                                | 13                                                | 710                                                            | 0.97                                                | 235                                               | --                                                   | 1.6                                                           | --                                                   | --                                                   | --                                                                 | 0.11                                        |
| APR<br>14... | 9.1                                                 | 0.3                                                | 11                                                | 880                                                            | 1.2                                                 | 705                                               | --                                                   | 1.1                                                           | --                                                   | --                                                   | --                                                                 | 0.37                                        |
| MAY<br>28... | --                                                  | --                                                 | --                                                | --                                                             | --                                                  | --                                                | <0.1                                                 | --                                                            | 0.02                                                 | 0.58                                                 | 0.6                                                                | 0.08                                        |
| JUN<br>29... | 4.0                                                 | 0.2                                                | 7.7                                               | 400                                                            | 0.55                                                | 372                                               | <0.1                                                 | <0.1                                                          | 0.03                                                 | 0.97                                                 | 1.0                                                                | 0.09                                        |
| AUG<br>11... | 5.0                                                 | 0.3                                                | 9.0                                               | 540                                                            | 0.74                                                | 228                                               | --                                                   | <0.1                                                          | --                                                   | --                                                   | --                                                                 | 0.06                                        |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>NATURAL<br>DIS-<br>SOLVED<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| OCT<br>03... | 0855 | 355                                             | 5.0                                  | 4.7                                                        | 18                                                             | <0.6                                                            | 5.7                                                    |
| JAN<br>28... | 1130 | 116                                             | 0.0                                  | <4.0                                                       | 5.9                                                            | 0.4                                                             | 5.6                                                    |
| APR<br>14... | 1500 | 298                                             | 11.5                                 | <5.0                                                       | 9.3                                                            | <0.2                                                            | 7.1                                                    |
| JUL<br>28... | 0930 | 188                                             | 24.0                                 | <3.0                                                       | 4.3                                                            | <0.2                                                            | 1.8                                                    |

## YELLOWSTONE RIVER BASIN

06233900 POPO AGIE RIVER NEAR ARAPAHOE, WY--Continued

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| APR<br>14... | 1500 | 298                                             | 11.5                                 | 0.16                                                            | 0.14                                                         | <0.01                     | 0.01                       | <0.01                      | <0.01                      |
| MAY<br>28... | 1110 | 640                                             | 11.5                                 | 0.02                                                            | 0.05                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUN<br>29... | 1500 | 342                                             | 20.0                                 | 0.02                                                            | 0.07                                                         | 0.10                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>28... | 0930 | 188                                             | 24.0                                 | 0.01                                                            | 0.09                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>11... | 1030 | 156                                             | 19.5                                 | 0.01                                                            | 0.08                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>09... | 1000 | 244                                             | 14.0                                 | 0.01                                                            | 0.04                                                         | 0.02                      | <0.01                      | <0.01                      | <0.01                      |

06235000 BEAVER CREEK NEAR ARAPAHOE, WY

LOCATION.--Lat 42°57'16", long 108°25'39", in NW1/4 NE1/4 sec.29, T.1 S., R.4 E., Fremont County, Hydrologic Unit 10080002, Wind River Indian Reservation, at former gaging station, 1.0 mi upstream from mouth, and 3.8 mi east of Arapahoe.

DRAINAGE AREA.--354 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1950-53, 1968-81, October 1984 to current year.

REMARKS.--No flow observed Jan. 30.

## RADIOCHEMICAL DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>NATURAL<br>DIS-<br>SOLVED<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| OCT<br>06... | 1140 | E1.0                                            | 7.0                                  | 60                                                         | 83                                                             | <0.6                                                            | 6.3                                                    |
| JAN<br>30... | 1100 | 0.0                                             | --                                   | --                                                         | --                                                             | --                                                              | --                                                     |
| APR<br>14... | 1000 | 99                                              | 4.5                                  | <4.0                                                       | 11                                                             | <0.1                                                            | 4.0                                                    |
| JUL<br>28... | 0810 | E0.10                                           | 26.0                                 | <6.0                                                       | 1.5                                                            | <0.2                                                            | 12                                                     |

E-Estimate.

## YELLOWSTONE RIVER BASIN

06235500 LITTLE WIND RIVER NEAR RIVERTON, WY

LOCATION.--Lat 42°59'51", long 108°22'29", in NE1/4 NW1/4 sec.11, T.1 S., R.4 E., Fremont County, Hydrologic Unit 10080002, Wind River Indian Reservation, on right bank 1.8 mi upstream from mouth and 1.9 mi southeast of Riverton.

DRAINAGE AREA.--1,904 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1941 to current year. Prior to October 1958, published as Popo Agie River near Riverton.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,901.84 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 19, 1956, at site 600 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 14 to Mar. 18. Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 62,900 acres upstream from station. U.S. Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--46 years, 590 ft<sup>3</sup>/s, 427,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,700 ft<sup>3</sup>/s, June 17, 1963, gage height, 10.85 ft; minimum daily, 41 ft<sup>3</sup>/s, Aug. 7, 1960.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                 | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------------------------------------|------|-----------------------------------|---------------------|
| June 10 | 1200 | *2,960                            | *5.82               | No peak greater than base discharge. |      |                                   |                     |

Minimum daily discharge, 140 ft<sup>3</sup>/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG    | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| 1           | 298   | 379    | 230   | 190   | 170   | 180   | 409   | 1510  | 988   | 473   | 228    | 302   |
| 2           | 429   | 379    | 230   | 190   | 190   | 210   | 376   | 1530  | 914   | 464   | 207    | 295   |
| 3           | 652   | 354    | 250   | 200   | 170   | 230   | 342   | 1500  | 811   | 474   | 190    | 294   |
| 4           | 503   | 370    | 250   | 200   | 170   | 270   | 365   | 1380  | 728   | 473   | 177    | 316   |
| 5           | 444   | 365    | 270   | 200   | 170   | 320   | 413   | 1310  | 706   | 467   | 165    | 375   |
| 6           | 423   | 372    | 270   | 210   | 180   | 390   | 517   | 1360  | 750   | 461   | 154    | 381   |
| 7           | 411   | 392    | 270   | 210   | 190   | 460   | 623   | 1410  | 933   | 414   | 151    | 361   |
| 8           | 407   | 364    | 250   | 200   | 190   | 500   | 759   | 1480  | 1740  | 381   | 171    | 344   |
| 9           | 417   | 337    | 230   | 180   | 190   | 500   | 887   | 1520  | 2520  | 359   | 205    | 341   |
| 10          | 419   | 265    | 210   | 160   | 200   | 480   | 807   | 1670  | 2860  | 342   | 197    | 328   |
| 11          | 432   | 282    | 170   | 160   | 200   | 470   | 575   | 1670  | 2530  | 977   | 190    | 318   |
| 12          | 431   | 345    | 190   | 160   | 190   | 480   | 590   | 1590  | 2130  | 1910  | 179    | 306   |
| 13          | 411   | 277    | 210   | 170   | 190   | 500   | 659   | 1570  | 1880  | 1360  | 181    | 297   |
| 14          | 426   | 280    | 220   | 170   | 190   | 510   | 539   | 1580  | 1710  | 922   | 181    | 287   |
| 15          | 425   | 300    | 230   | 160   | 180   | 500   | 471   | 1520  | 1570  | 679   | 190    | 276   |
| 16          | 408   | 320    | 230   | 140   | 180   | 500   | 532   | 1590  | 1420  | 545   | 240    | 269   |
| 17          | 389   | 330    | 230   | 150   | 180   | 490   | 702   | 1980  | 1400  | 479   | 240    | 272   |
| 18          | 381   | 330    | 210   | 150   | 190   | 480   | 824   | 2370  | 1230  | 524   | 225    | 275   |
| 19          | 383   | 350    | 230   | 160   | 200   | 486   | 1030  | 2680  | 1040  | 628   | 207    | 276   |
| 20          | 410   | 340    | 230   | 160   | 200   | 444   | 938   | 2170  | 872   | 587   | 205    | 277   |
| 21          | 462   | 320    | 250   | 170   | 200   | 404   | 702   | 1980  | 766   | 474   | 200    | 280   |
| 22          | 537   | 310    | 250   | 170   | 200   | 378   | 569   | 1820  | 692   | 405   | 195    | 276   |
| 23          | 641   | 300    | 260   | 170   | 200   | 367   | 618   | 1550  | 644   | 534   | 216    | 267   |
| 24          | 553   | 280    | 260   | 190   | 200   | 353   | 766   | 1350  | 561   | 497   | 260    | 255   |
| 25          | 505   | 290    | 250   | 190   | 190   | 345   | 868   | 1590  | 490   | 420   | 371    | 234   |
| 26          | 458   | 260    | 240   | 190   | 190   | 329   | 936   | 1390  | 420   | 377   | 395    | 226   |
| 27          | 434   | 260    | 230   | 190   | 170   | 340   | 1040  | 1200  | 391   | 322   | 363    | 221   |
| 28          | 431   | 250    | 230   | 190   | 180   | 337   | 1140  | 1120  | 376   | 270   | 347    | 218   |
| 29          | 416   | 250    | 230   | 190   | ---   | 309   | 1280  | 1120  | 397   | 258   | 327    | 214   |
| 30          | 402   | 260    | 210   | 170   | ---   | 304   | 1380  | 1140  | 467   | 276   | 311    | 202   |
| 31          | 400   | ---    | 200   | 170   | ---   | 331   | ---   | 1060  | ---   | 243   | 308    | ---   |
| TOTAL       | 13738 | 9511   | 7220  | 5510  | 5250  | 12197 | 21657 | 48710 | 33936 | 16995 | 7176   | 8583  |
| MEAN        | 443   | 317    | 233   | 178   | 188   | 393   | 722   | 1571  | 1131  | 548   | 231    | 286   |
| MAX         | 652   | 392    | 270   | 210   | 200   | 510   | 1380  | 2680  | 2860  | 1910  | 395    | 381   |
| MIN         | 298   | 250    | 170   | 140   | 170   | 180   | 342   | 1060  | 376   | 243   | 151    | 202   |
| AC-FT       | 27250 | 18870  | 14320 | 10930 | 10410 | 24190 | 42960 | 96620 | 67310 | 33710 | 14230  | 17020 |
| CAL YR 1986 | TOTAL | 322371 |       | MEAN  | 883   | MAX   | 6470  | MIN   | 170   | AC-FT | 639400 |       |
| WTR YR 1987 | TOTAL | 190483 |       | MEAN  | 522   | MAX   | 2860  | MIN   | 140   | AC-FT | 377800 |       |

06235500 LITTLE WIND RIVER NEAR RIVERTON, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-58, 1960-64, 1966 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| MAY<br>27... | 1140 | 1170                                            | 12.0                                 | <0.1                                                 | 0.03                                                 | 0.77                                                 | 0.8                                                                | 0.05                                        |
| JUN<br>26... | 1240 | 418                                             | 22.0                                 | <0.1                                                 | 0.02                                                 | 0.48                                                 | 0.5                                                                | 0.06                                        |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>NATURAL<br>DIS-<br>SOLVED<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| OCT<br>06... | 1410 | 410                                             | 6.0                                  | <3.0                                                       | 15                                                             | <0.6                                                            | 5.9                                                    |
| JAN<br>26... | 1415 | 182                                             | 0.0                                  | <5.0                                                       | 7.1                                                            | 0.6                                                             | 5.0                                                    |
| APR<br>16... | 1220 | 507                                             | 12.0                                 | <4.0                                                       | 7.6                                                            | <0.2                                                            | 7.9                                                    |
| JUL<br>30... | 1000 | 249                                             | 21.0                                 | <3.0                                                       | 4.6                                                            | <0.2                                                            | 3.7                                                    |



## YELLOWSTONE RIVER BASIN

06236100 WIND RIVER ABOVE BOYSEN RESERVOIR, NEAR SHOSHONI, WY

LOCATION.--Lat 43°07'43", long 108°13'28", in NW1/4 NE1/4 NE1/4 sec.25, T.2 N., R.5 E., Fremont County, Hydrologic Unit 10080001, Wind River Indian Reservation, 4.0 mi upstream from Muskrat Creek, 5.3 mi upstream from high-water line of Boysen Reservoir at elevation 4,725 ft, and 9.4 mi southwest of Shoshoni.

DRAINAGE AREA.--4,390 mi<sup>2</sup>.

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>09... | 1200 | 1480                                            | 560                                               | 8.3                            | 15.0                                 | 645                                                  | 10.1                                |
| JAN<br>29... | 1250 | 623                                             | 600                                               | 8.0                            | 0.0                                  | 638                                                  | 10.8                                |
| APR<br>15... | 1415 | 723                                             | 840                                               | 8.4                            | 13.0                                 | 640                                                  | 9.6                                 |
| JUL<br>14... | 1550 | 1780                                            | 670                                               | 8.5                            | 22.0                                 | 644                                                  | 9.6                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>09... | 119                                                            | K110                                                           | 0.1                                                  | 0.08                                                 | 0.42                                                 | 0.5                                                                | 0.04                                        |
| JAN<br>29... | 88                                                             | <1                                                             | 0.4                                                  | 0.10                                                 | 0.30                                                 | 0.4                                                                | 0.03                                        |
| APR<br>15... | 109                                                            | K16                                                            | 0.3                                                  | 0.03                                                 | 1.1                                                  | 1.1                                                                | 0.06                                        |
| JUL<br>14... | 131                                                            | 140                                                            | <0.1                                                 | 0.02                                                 | 0.58                                                 | 0.6                                                                | 0.08                                        |

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

## 06259000 WIND RIVER BELOW BOYSEN RESERVOIR, WY

LOCATION.--Lat 43°25'30", long 108°10'42", in NW1/4 SW1/4 sec.9, T.5 N., R.6 E., Fremont County, Hydrologic Unit 10080005, on right bank 0.6 mi downstream from Boysen Dam and 13 mi north of Shoshoni.

DRAINAGE AREA.--7,701 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1951 to current year.

REVISED RECORDS.--WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,608.58 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Boysen Reservoir (station 06258900) since October 1951. Natural flow also affected by Bull Lake, Pilot Butte Reservoir, and several small reservoirs, combined capacity, 190,000 acre-ft, and diversions for irrigation of about 196,000 acres upstream from station.

AVERAGE DISCHARGE.--36 years, 1,451 ft<sup>3</sup>/s, 1,051,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,500 ft<sup>3</sup>/s, July 7, 1967, gage height, 13.35 ft; minimum daily, 4.7 ft<sup>3</sup>/s, Apr. 3, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,860 ft<sup>3</sup>/s, June 1, gage height, 5.66 ft; minimum daily, 865 ft<sup>3</sup>/s, Jan. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR    | MAY   | JUN   | JUL   | AUG     | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|--------|-------|-------|-------|---------|-------|
| 1           | 1520  | 1540   | 1230  | 1340  | 1090  | 1400  | 1680   | 1800  | 1760  | 1170  | 1090    | 1190  |
| 2           | 1530  | 1530   | 1020  | 1340  | 1090  | 1400  | 1670   | 1820  | 1800  | 1180  | 1100    | 1190  |
| 3           | 1530  | 1530   | 1020  | 1330  | 1090  | 1400  | 1650   | 1780  | 1780  | 1190  | 1100    | 1190  |
| 4           | 1520  | 1520   | 1020  | 1320  | 1100  | 1400  | 1680   | 1790  | 1250  | 1200  | 1160    | 1230  |
| 5           | 1520  | 1520   | 1020  | 1310  | 1090  | 1410  | 1700   | 1790  | 1240  | 1190  | 1190    | 1250  |
| 6           | 1510  | 1500   | 1030  | 1320  | 1080  | 1400  | 1690   | 1790  | 1250  | 1170  | 1190    | 1250  |
| 7           | 1520  | 1500   | 1030  | 1320  | 1080  | 1400  | 1680   | 1790  | 1250  | 1120  | 1200    | 1250  |
| 8           | 1540  | 1510   | 1030  | 1320  | 1070  | 1420  | 1660   | 1540  | 1230  | 1090  | 1200    | 1260  |
| 9           | 1530  | 1520   | 1040  | 1320  | 1150  | 1480  | 1660   | 1320  | 1060  | 1080  | 1200    | 1260  |
| 10          | 1550  | 1520   | 1020  | 1320  | 1330  | 1560  | 1660   | 1310  | 1060  | 1080  | 1200    | 1260  |
| 11          | 1530  | 1530   | 1030  | 1240  | 1420  | 1550  | 1670   | 1200  | 1060  | 1090  | 1190    | 1260  |
| 12          | 1510  | 1520   | 1210  | 1110  | 1410  | 1550  | 1680   | 1140  | 1050  | 1090  | 1200    | 1250  |
| 13          | 1520  | 1520   | 1350  | 1070  | 1400  | 1550  | 1670   | 1230  | 1040  | 1090  | 1200    | 1250  |
| 14          | 1520  | 1510   | 1460  | 1070  | 1410  | 1550  | 1670   | 1260  | 1050  | 1090  | 1200    | 1250  |
| 15          | 1520  | 1510   | 1440  | 1140  | 1390  | 1550  | 1680   | 1270  | 1050  | 1110  | 1200    | 1250  |
| 16          | 1540  | 1510   | 1430  | 1040  | 1390  | 1560  | 1680   | 1270  | 1090  | 1090  | 1190    | 1300  |
| 17          | 1530  | 1530   | 1430  | 1050  | 1390  | 1560  | 1750   | 1290  | 1090  | 1090  | 1200    | 1320  |
| 18          | 1530  | 1520   | 1410  | 1050  | 1390  | 1560  | 1800   | 1270  | 1090  | 1090  | 1210    | 1330  |
| 19          | 1540  | 1510   | 1400  | 1060  | 1400  | 1550  | 1790   | 1260  | 1130  | 1100  | 1200    | 1320  |
| 20          | 1530  | 1520   | 1410  | 1050  | 1400  | 1550  | 1790   | 1250  | 1190  | 1090  | 1190    | 1320  |
| 21          | 1520  | 1530   | 1440  | 1050  | 1420  | 1530  | 1780   | 1250  | 1200  | 1090  | 1190    | 1320  |
| 22          | 1530  | 1530   | 1410  | 866   | 1420  | 1540  | 1780   | 1250  | 1220  | 1090  | 1180    | 1320  |
| 23          | 1530  | 1530   | 1440  | 865   | 1420  | 1530  | 1790   | 1250  | 1210  | 1090  | 1180    | 1320  |
| 24          | 1530  | 1520   | 1410  | 867   | 1390  | 1640  | 1790   | 1240  | 1190  | 1100  | 1190    | 1320  |
| 25          | 1530  | 1530   | 1430  | 873   | 1390  | 1690  | 1780   | 1230  | 1190  | 1100  | 1190    | 1320  |
| 26          | 1530  | 1530   | 1450  | 871   | 1400  | 1680  | 1790   | 1230  | 1180  | 1110  | 1200    | 1310  |
| 27          | 1530  | 1540   | 1440  | 899   | 1420  | 1680  | 1790   | 1230  | 1190  | 1110  | 1200    | 1320  |
| 28          | 1540  | 1540   | 1440  | 954   | 1400  | 1680  | 1790   | 1240  | 1190  | 1110  | 1200    | 1320  |
| 29          | 1530  | 1540   | 1390  | 1040  | ---   | 1670  | 1790   | 1130  | 1180  | 1090  | 1200    | 1320  |
| 30          | 1540  | 1530   | 1330  | 1090  | ---   | 1670  | 1800   | 917   | 1180  | 1040  | 1190    | 1320  |
| 31          | 1540  | ---    | 1340  | 1090  | ---   | 1670  | ---    | 922   | ---   | 1090  | 1190    | ---   |
| TOTAL       | 47390 | 45690  | 39550 | 34585 | 36430 | 47780 | 51790  | 42059 | 36450 | 34420 | 36720   | 38370 |
| MEAN        | 1529  | 1523   | 1276  | 1116  | 1301  | 1541  | 1726   | 1357  | 1215  | 1110  | 1185    | 1279  |
| MAX         | 1550  | 1540   | 1460  | 1340  | 1420  | 1690  | 1800   | 1820  | 1800  | 1200  | 1210    | 1330  |
| MIN         | 1510  | 1500   | 1020  | 865   | 1070  | 1400  | 1650   | 917   | 1040  | 1040  | 1090    | 1190  |
| AC-FT       | 94000 | 90630  | 78450 | 68600 | 72260 | 94770 | 102700 | 83420 | 72300 | 68270 | 72830   | 76110 |
| CAL YR 1986 | TOTAL | 732192 |       | MEAN  | 2006  | MAX   | 7210   | MIN   | 888   | AC-FT | 1452000 |       |
| WTR YR 1987 | TOTAL | 491234 |       | MEAN  | 1346  | MAX   | 1820   | MIN   | 865   | AC-FT | 974400  |       |

## YELLOWSTONE RIVER BASIN

06259000 WIND RIVER BELOW BOYSEN RESERVOIR, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954, 1961 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1953 to September 1954, December 1960 to September 1981.

WATER TEMPERATURES: December 1953 to September 1954, December 1960 to September 1981.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------|
| OCT<br>09... | 1030 | 1600                                            | 530                                               | 8.2                            | 13.5                                 | 650                                                  | 8.0                                 | 90                                                             | K16                                                            | 170                                    |
| JAN<br>29... | 1055 | 1060                                            | 560                                               | 8.0                            | 4.0                                  | 638                                                  | 11.2                                | 102                                                            | <1                                                             | 190                                    |
| APR<br>15... | 1220 | 1690                                            | 685                                               | 8.0                            | 6.0                                  | 645                                                  | 13.4                                | 128                                                            | <1                                                             | 220                                    |
| JUL<br>14... | 1240 | 1100                                            | 610                                               | 8.2                            | 18.0                                 | 648                                                  | 9.2                                 | 115                                                            | <1                                                             | 190                                    |

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

| DATE         | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) |
|--------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|
| OCT<br>09... | 44                                           | 14                                                   | 48                                           | 2                                       | 1.5                                                 | 120                                             | 120                                           | 5.0                                                 | 0.3                                                | 10                                                |
| JAN<br>29... | 50                                           | 17                                                   | 53                                           | 2                                       | 2.2                                                 | 130                                             | 160                                           | 5.9                                                 | 0.4                                                | 10                                                |
| APR<br>15... | 57                                           | 18                                                   | 60                                           | 2                                       | 2.6                                                 | 150                                             | 200                                           | 6.7                                                 | 0.3                                                | 8.9                                               |
| JUL<br>14... | 50                                           | 16                                                   | 53                                           | 2                                       | 2.4                                                 | 120                                             | 160                                           | 6.3                                                 | 0.3                                                | 8.8                                               |

| DATE         | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|--------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>09... | 356                                                                | 310                                                            | 0.48                                                | 1540                                              | 0.2                                                  | 1.0                                                           | 0.02                                                 | 0.58                                                 | 0.6                                                                | 0.06                                        |
| JAN<br>29... | 392                                                                | 380                                                            | 0.53                                                | 1120                                              | 0.2                                                  | 0.20                                                          | 0.02                                                 | 0.38                                                 | 0.4                                                                | 0.03                                        |
| APR<br>15... | 443                                                                | 440                                                            | 0.60                                                | 2020                                              | 0.1                                                  | 0.15                                                          | 0.03                                                 | 0.37                                                 | 0.4                                                                | 0.02                                        |
| JUL<br>14... | 388                                                                | 370                                                            | 0.50                                                | 1100                                              | 0.1                                                  | 0.10                                                          | 0.02                                                 | --                                                   | <0.2                                                               | 0.03                                        |

## 06260400 SOUTH FORK OWL CREEK BELOW ANCHOR RESERVOIR, WY

LOCATION.--Lat 43°39'57", long 108°47'34", in sec.25, T.43 N., R.100 W., Hot Springs County, Hydrologic Unit 10080007, on left bank 1.6 mi downstream from Anchor Dam and 30 mi west of Thermopolis.

DRAINAGE AREA.--131 mi<sup>2</sup>.

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

REVISED RECORDS.--WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,120 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 13 to Apr. 4. Records good except those for estimated daily discharges, which are poor. Flow regulated by Anchor Dam (see station 06260300). No diversion upstream from station.

AVERAGE DISCHARGE.--28 years, 22.4 ft<sup>3</sup>/s, 16,230 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 373 ft<sup>3</sup>/s, May 26, 1967, gage height, 3.64 ft; maximum gage height, 3.72 ft, June 7, 1986; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 184 ft<sup>3</sup>/s, June 14, gage height, 3.36 ft; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV      | DEC   | JAN  | FEB  | MAR  | APR    | MAY  | JUN  | JUL   | AUG   | SEP  |
|-------------|-------|----------|-------|------|------|------|--------|------|------|-------|-------|------|
| 1           | 7.5   | 5.5      | 3.5   | .30  | .20  | .00  | .80    | 136  | 63   | 78    | 53    | 23   |
| 2           | 9.4   | 5.0      | 3.0   | .30  | .20  | .00  | 1.0    | 130  | 58   | 62    | 52    | 22   |
| 3           | 8.2   | 5.0      | 2.5   | .30  | .10  | .00  | 2.0    | 54   | 52   | 48    | 51    | 21   |
| 4           | 8.3   | 5.0      | 2.7   | .30  | .10  | .00  | 4.0    | 31   | 61   | 40    | 52    | 22   |
| 5           | 9.8   | 5.5      | 2.9   | .10  | .20  | .10  | 10     | 46   | 103  | 37    | 67    | 24   |
| 6           | 9.4   | 5.0      | 2.6   | .00  | .30  | .40  | 12     | 75   | 103  | 33    | 72    | 22   |
| 7           | 9.3   | 4.5      | 2.3   | .00  | .30  | .30  | 16     | 88   | 113  | 30    | 80    | 21   |
| 8           | 9.2   | 3.5      | 1.5   | .00  | .40  | .10  | 8.3    | 98   | 135  | 27    | 34    | 20   |
| 9           | 11    | 2.5      | .60   | .00  | .50  | .10  | 5.4    | 104  | 129  | 26    | 53    | 19   |
| 10          | 10    | 1.0      | .80   | .20  | .50  | .20  | 5.6    | 97   | 112  | 35    | 83    | 19   |
| 11          | 5.9   | 2.0      | 1.0   | .30  | .50  | .30  | 11     | 93   | 117  | 50    | 46    | 18   |
| 12          | 1.9   | 2.5      | 1.0   | .40  | .50  | .40  | 22     | 83   | 118  | 47    | 28    | 19   |
| 13          | 4.0   | 3.0      | 1.0   | .30  | .50  | .40  | 21     | 107  | 120  | 48    | 27    | 17   |
| 14          | 5.0   | 3.5      | 1.0   | .10  | .40  | .40  | 16     | 101  | 160  | 51    | 28    | 17   |
| 15          | 6.0   | 4.0      | 1.0   | .00  | .30  | .30  | 7.4    | 117  | 161  | 51    | 31    | 17   |
| 16          | 7.0   | 4.2      | 1.0   | .00  | .20  | .10  | 9.1    | 121  | 138  | 49    | 29    | 17   |
| 17          | 7.5   | 4.2      | .50   | .00  | .20  | .20  | 15     | 126  | 128  | 48    | 27    | 17   |
| 18          | 7.5   | 4.0      | .50   | .00  | .20  | .40  | 18     | 130  | 133  | 46    | 25    | 16   |
| 19          | 7.5   | 4.0      | .50   | .00  | .20  | .30  | 37     | 119  | 133  | 15    | 23    | 16   |
| 20          | 7.5   | 4.0      | .50   | .00  | .20  | .20  | 46     | 98   | 72   | 32    | 22    | 16   |
| 21          | 7.5   | 4.0      | .50   | .00  | .20  | .10  | 39     | 73   | 56   | 79    | 22    | 15   |
| 22          | 7.0   | 3.8      | .50   | .00  | .10  | .10  | 33     | 58   | 54   | 75    | 23    | 15   |
| 23          | 7.0   | 3.8      | .50   | .00  | .00  | .10  | 34     | 47   | 40   | 71    | 24    | 15   |
| 24          | 7.0   | 4.0      | .50   | .00  | .00  | .10  | 41     | 44   | 36   | 67    | 24    | 15   |
| 25          | 7.5   | 4.0      | .50   | .00  | .00  | .30  | 50     | 45   | 37   | 61    | 29    | 14   |
| 26          | 7.5   | 4.2      | .50   | .00  | .00  | .50  | 57     | 48   | 36   | 59    | 29    | 14   |
| 27          | 7.5   | 4.2      | .50   | .00  | .00  | .30  | 76     | 47   | 35   | 54    | 30    | 14   |
| 28          | 7.0   | 3.7      | .50   | .00  | .00  | .20  | 86     | 43   | 33   | 42    | 28    | 14   |
| 29          | 7.0   | 3.5      | .50   | .00  | ---  | .20  | 99     | 49   | 37   | 40    | 27    | 14   |
| 30          | 7.0   | 3.5      | .50   | .00  | ---  | .50  | 122    | 55   | 59   | 51    | 27    | 14   |
| 31          | 6.0   | ---      | .30   | .00  | ---  | 1.0  | ---    | 62   | ---  | 52    | 25    | ---  |
| TOTAL       | 229.9 | 116.6    | 35.70 | 2.60 | 6.30 | 7.60 | 904.60 | 2525 | 2632 | 1504  | 1171  | 527  |
| MEAN        | 7.42  | 3.89     | 1.15  | .08  | .22  | .25  | 30.2   | 81.5 | 87.7 | 48.5  | 37.8  | 17.6 |
| MAX         | 11    | 5.5      | 3.5   | .40  | .50  | 1.0  | 122    | 136  | 161  | 79    | 83    | 24   |
| MIN         | 1.9   | 1.0      | .30   | .00  | .00  | .00  | .80    | 31   | 33   | 15    | 22    | 14   |
| AC-FT       | 456   | 231      | 71    | 5.2  | 12   | 15   | 1790   | 5010 | 5220 | 2980  | 2320  | 1050 |
| CAL YR 1986 | TOTAL | 13289.41 |       | MEAN | 36.4 | MAX  | 277    | MIN  | .00  | AC-FT | 26360 |      |
| WTR YR 1987 | TOTAL | 9662.30  |       | MEAN | 26.5 | MAX  | 161    | MIN  | .00  | AC-FT | 19170 |      |

## YELLOWSTONE RIVER BASIN

06264700 BIGHORN RIVER AT LUCERNE, WY

LOCATION.--Lat 43°44'10", long 108°09'38", in SE1/4 sec.32, T.44 N., R.94 W., Hot Springs County, Hydrologic Unit 10080007, at bridge on Black Mountain road, 0.7 mi upstream from Kirby Creek, 0.8 mi east of Lucerne, and 1.0 mi downstream from Owl Creek.

PERIOD OF RECORD.--Water years 1966 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| NOV<br>19... | 0710 | 1550                                            | 510                                               | 8.1                            | 2.0                                  | 642                                                  | 11.7                                |
| JAN<br>29... | 1640 | 1970                                            | 715                                               | 8.2                            | 4.0                                  | 652                                                  | 11.4                                |
| APR<br>21... | 1620 | 1730                                            | 745                                               | 8.0                            | 9.0                                  | 665                                                  | 10.0                                |
| JUL<br>06... | 1130 | 1600                                            | 840                                               | 8.3                            | 19.5                                 | 645                                                  | 11.7                                |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| NOV<br>19... | 101                                                            | K37                                                            | 0.1                                                  | <0.01                                                | --                                                   | 0.9                                                                | 0.02                                        |
| JAN<br>29... | 102                                                            | 100                                                            | <0.1                                                 | 0.02                                                 | 0.38                                                 | 0.4                                                                | 0.07                                        |
| APR<br>21... | 99                                                             | 140                                                            | 0.1                                                  | 0.03                                                 | 0.57                                                 | 0.6                                                                | 0.02                                        |
| JUL<br>06... | 152                                                            | K210                                                           | <0.1                                                 | 0.03                                                 | 0.77                                                 | 0.8                                                                | 0.08                                        |

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



06267400 EAST FORK NOWATER CREEK NEAR COLTER, WY

LOCATION.--Lat 43°54'55", long 107°55'46", in SE1/4 NE1/4 sec.31, T.46 N., R.92 W., Washakie County, Hydrologic Unit 10080007, on right bank 30 ft upstream from county road, 1.8 mi upstream from mouth, 5.2 mi southeast of Colter, and 7.0 mi south of Worland.

DRAINAGE AREA.--149 mi<sup>2</sup>.

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

REVISED RECORDS.--WDR WY-75-1: 1972-73.

GAGE.--Water-stage recorder. Elevation of gage is 4,165 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1, 5-10, Oct. 15 to Nov. 20, Nov. 26 to Mar. 6, Mar. 10-16, 20, 28-30, Apr. 3 to May 21, May 25-27, June 1-6, 9, 10, June 13 to July 2, July 5-10, 14-17, 21-28, July 30 to Aug. 23, and Aug. 28 to Sept. 30. Records good except those for Oct. 15 to Nov. 20, Nov. 26-29, Jan. 28 to Mar. 6, Mar. 28-30, June 9-10, and July 30 to Aug. 21, which are poor.

AVERAGE DISCHARGE.--16 years, 4.51 ft<sup>3</sup>/s, 3,270 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,040 ft<sup>3</sup>/s, May 18, 1978, gage height, 6.65 ft; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time    | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|---------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Oct. 2 | 2400    | 311                            | 2.03             | June 8  | 0700 | *1,320                         | *4.06            |
| Mar. 7 | unknown | 756                            | a3.02            | July 11 | 1000 | 415                            | 2.26             |
| May 30 | 0100    | 523                            | 2.50             | Aug. 24 | 0700 | 581                            | 2.63             |

a From floodmark.

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT    | NOV     | DEC | JAN  | FEB    | MAR    | APR   | MAY    | JUN    | JUL    | AUG    | SEP |
|-------------|--------|---------|-----|------|--------|--------|-------|--------|--------|--------|--------|-----|
| 1           | .00    | .00     | .00 | .00  | .40    | .00    | 16    | .00    | .02    | .00    | .00    | .00 |
| 2           | 39     | .00     | .00 | .00  | .50    | .00    | 6.3   | .00    | .00    | .00    | .00    | .00 |
| 3           | 87     | .00     | .00 | .00  | .50    | .00    | .32   | .00    | .00    | 13     | .00    | .00 |
| 4           | 5.2    | .00     | .00 | .00  | 15     | .00    | .03   | .00    | .00    | .85    | .00    | .00 |
| 5           | .50    | .00     | .00 | .00  | 20     | .00    | .00   | .00    | .00    | .00    | .00    | .00 |
| 6           | .00    | .00     | .00 | .00  | 20     | 83     | .00   | .00    | .00    | .00    | .00    | .00 |
| 7           | .00    | .00     | .00 | .00  | 15     | 293    | .00   | .00    | 10     | .00    | .00    | .00 |
| 8           | .00    | .00     | .00 | .00  | 12     | 73     | .00   | .00    | 347    | .00    | .00    | .00 |
| 9           | .00    | .00     | .00 | .00  | 10     | 3.1    | .00   | .00    | 14     | .00    | .00    | .00 |
| 10          | .00    | .00     | .00 | .00  | 8.0    | .11    | .00   | .00    | 7.1    | .00    | .00    | .00 |
| 11          | .59    | .00     | .00 | .00  | 6.0    | .00    | .00   | .00    | 2.9    | 72     | .00    | .00 |
| 12          | 31     | .00     | .00 | .00  | 4.0    | .00    | .00   | .00    | .53    | 3.9    | .00    | .00 |
| 13          | 9.1    | .00     | .00 | .00  | 2.0    | .00    | .00   | .00    | .01    | .32    | .00    | .00 |
| 14          | 5.5    | .00     | .00 | .00  | 1.0    | .00    | .00   | .00    | .00    | .00    | .00    | .00 |
| 15          | 1.5    | .00     | .00 | .00  | .50    | .00    | .00   | .00    | .00    | .00    | 34     | .00 |
| 16          | .32    | .00     | .00 | .00  | .20    | .00    | .00   | .00    | .00    | .00    | 4.2    | .00 |
| 17          | .03    | .00     | .00 | .00  | .10    | 4.0    | .00   | .00    | .00    | .00    | .03    | .00 |
| 18          | .00    | .00     | .00 | .00  | .00    | 15     | .00   | .00    | .00    | 39     | .00    | .00 |
| 19          | .00    | .00     | .00 | .00  | .00    | 2.2    | .00   | .00    | .00    | 2.1    | .00    | .00 |
| 20          | .00    | .00     | .00 | .00  | .00    | .35    | .00   | .00    | .00    | .73    | .00    | .00 |
| 21          | .00    | 4.5     | .00 | .00  | .00    | .42    | .00   | .00    | .00    | .21    | .00    | .00 |
| 22          | .00    | 31      | .00 | .00  | .00    | 37     | .00   | 2.1    | .00    | .03    | .00    | .00 |
| 23          | .00    | 9.3     | .00 | .00  | .00    | 33     | .00   | 1.4    | .00    | .00    | .00    | .00 |
| 24          | .00    | 4.1     | .00 | .00  | .00    | 30     | .00   | .76    | .00    | .00    | 134    | .00 |
| 25          | .00    | 1.5     | .00 | .00  | .00    | 9.3    | .00   | .03    | .00    | .00    | 3.2    | .00 |
| 26          | .00    | .85     | .00 | .00  | .00    | 1.3    | .00   | .00    | .00    | .00    | 3.9    | .00 |
| 27          | .00    | .32     | .00 | .00  | .00    | 11     | .00   | .00    | .00    | .00    | .17    | .00 |
| 28          | .00    | .13     | .00 | .20  | .00    | 9.1    | .00   | 49     | .00    | .00    | .00    | .00 |
| 29          | .00    | .02     | .00 | .30  | ---    | 8.1    | .00   | 45     | .00    | 37     | .00    | .00 |
| 30          | .00    | .00     | .00 | .20  | ---    | 5.5    | .00   | 75     | .00    | .10    | .00    | .00 |
| 31          | .00    | ---     | .00 | .20  | ---    | 53     | ---   | 1.2    | ---    | .00    | .00    | --- |
| TOTAL       | 179.74 | 51.72   | .00 | .90  | 115.20 | 671.48 | 22.65 | 174.49 | 381.56 | 169.24 | 179.50 | .00 |
| MEAN        | 5.80   | 1.72    | .00 | .03  | 4.11   | 21.7   | .75   | 5.63   | 12.7   | 5.46   | 5.79   | .00 |
| MAX         | 87     | 31      | .00 | .30  | 20     | 293    | 16    | 75     | 347    | 72     | 134    | .00 |
| MIN         | .00    | .00     | .00 | .00  | .00    | .00    | .00   | .00    | .00    | .00    | .00    | .00 |
| AC-FT       | 357    | 103     | .00 | 1.8  | 223    | 1330   | 45    | 346    | 757    | 336    | 356    | .00 |
| CAL YR 1986 | TOTAL  | 986.20  |     | MEAN | 2.70   | MAX    | 211   | MIN    | .00    | AC-FT  | 1960   |     |
| WTR YR 1987 | TOTAL  | 1946.48 |     | MEAN | 5.33   | MAX    | 347   | MIN    | .00    | AC-FT  | 3860   |     |

## YELLOWSTONE RIVER BASIN

06270000 NOWOOD RIVER NEAR TEN SLEEP, WY

LOCATION.--Lat 44°00'48", long 107°25'39", in SW1/4 NW1/4 sec.27, T.47 N., R.88 W., Washakie County, Hydrologic Unit 10080008, on right bank 1.7 mi southeast of Ten Sleep and 4.3 mi upstream from Tensleep Creek.

DRAINAGE AREA.--803 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1938 to September 1943, March 1950 to December 1955 (published as Nowood Creek near Tensleep), October 1972 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,420 ft above National Geodetic Vertical Datum of 1929, from topographic map. May 6, 1938, to Sept. 30, 1943, nonrecording gage at site 200 ft downstream at different datum. Mar. 17, 1950, to Dec. 31, 1955, water-stage recorder at site 100 ft upstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 12 to Mar. 13 and Aug. 16-19. Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 550 acres upstream from station.

AVERAGE DISCHARGE.--25 years (water years 1939-43, 1951-55, 1973-87), 116 ft<sup>3</sup>/s, 84,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,380 ft<sup>3</sup>/s, May 19, 1978, gage height, 12.94 ft; maximum gage height observed, 13.0 ft, Mar. 12, 13, 1942 (ice jam), site and datum then in use; minimum daily discharge, 0.70 ft<sup>3</sup>/s, Aug. 13, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Apr. 28 | 0300 | 714                               | 6.94                | June 7 | 2400 | *1,070                            | *8.07               |
| May 29  | 0100 | 757                               | 7.09                |        |      |                                   |                     |

Minimum daily discharge, 16 ft<sup>3</sup>/s, Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN  | JUL   | AUG   | SEP  |
|-------------|-------|-------|------|------|------|------|-------|-------|------|-------|-------|------|
| 1           | 90    | 80    | 70   | 62   | 84   | 76   | 80    | 448   | 142  | 45    | 49    | 27   |
| 2           | 101   | 80    | 66   | 64   | 84   | 80   | 83    | 413   | 131  | 42    | 46    | 26   |
| 3           | 112   | 85    | 66   | 66   | 80   | 85   | 79    | 434   | 123  | 42    | 46    | 26   |
| 4           | 101   | 90    | 70   | 68   | 80   | 90   | 74    | 383   | 113  | 57    | 46    | 26   |
| 5           | 93    | 90    | 74   | 65   | 82   | 95   | 83    | 307   | 101  | 46    | 47    | 31   |
| 6           | 90    | 85    | 70   | 62   | 85   | 100  | 93    | 258   | 94   | 49    | 48    | 37   |
| 7           | 87    | 75    | 70   | 58   | 85   | 95   | 101   | 227   | 231  | 42    | 46    | 46   |
| 8           | 80    | 65    | 70   | 58   | 88   | 90   | 108   | 202   | 383  | 38    | 48    | 44   |
| 9           | 80    | 55    | 66   | 58   | 90   | 90   | 104   | 178   | 196  | 41    | 46    | 40   |
| 10          | 80    | 50    | 66   | 60   | 90   | 90   | 103   | 161   | 176  | 46    | 49    | 38   |
| 11          | 81    | 55    | 70   | 64   | 90   | 92   | 98    | 153   | 140  | 89    | 52    | 41   |
| 12          | 85    | 55    | 70   | 66   | 90   | 94   | 96    | 151   | 119  | 73    | 51    | 43   |
| 13          | 90    | 60    | 72   | 66   | 86   | 95   | 103   | 138   | 101  | 67    | 55    | 41   |
| 14          | 100   | 65    | 73   | 60   | 82   | 93   | 101   | 118   | 90   | 59    | 56    | 37   |
| 15          | 110   | 65    | 73   | 56   | 80   | 91   | 94    | 104   | 83   | 53    | 84    | 37   |
| 16          | 110   | 65    | 73   | 55   | 80   | 90   | 98    | 94    | 90   | 52    | 50    | 49   |
| 17          | 105   | 65    | 73   | 60   | 80   | 90   | 130   | 89    | 79   | 54    | 30    | 51   |
| 18          | 100   | 63    | 73   | 65   | 80   | 88   | 195   | 114   | 77   | 75    | 22    | 49   |
| 19          | 95    | 62    | 73   | 70   | 76   | 82   | 306   | 108   | 79   | 62    | 18    | 49   |
| 20          | 90    | 62    | 73   | 70   | 76   | 85   | 378   | 98    | 77   | 60    | 17    | 53   |
| 21          | 90    | 62    | 73   | 70   | 76   | 88   | 272   | 102   | 72   | 54    | 16    | 51   |
| 22          | 85    | 60    | 73   | 70   | 76   | 83   | 243   | 112   | 74   | 54    | 17    | 52   |
| 23          | 85    | 60    | 73   | 74   | 74   | 80   | 259   | 96    | 74   | 57    | 17    | 51   |
| 24          | 90    | 64    | 72   | 78   | 72   | 82   | 332   | 90    | 74   | 51    | 29    | 51   |
| 25          | 95    | 64    | 70   | 82   | 70   | 80   | 446   | 85    | 71   | 49    | 23    | 50   |
| 26          | 100   | 67    | 70   | 84   | 70   | 79   | 547   | 92    | 64   | 54    | 24    | 42   |
| 27          | 100   | 70    | 70   | 84   | 72   | 77   | 587   | 90    | 56   | 61    | 27    | 40   |
| 28          | 100   | 70    | 70   | 82   | 74   | 80   | 652   | 140   | 53   | 90    | 26    | 42   |
| 29          | 95    | 70    | 70   | 80   | ---  | 82   | 559   | 367   | 52   | 93    | 26    | 45   |
| 30          | 90    | 70    | 66   | 79   | ---  | 74   | 485   | 199   | 48   | 80    | 28    | 46   |
| 31          | 85    | ---   | 60   | 80   | ---  | 79   | ---   | 168   | ---  | 53    | 27    | ---  |
| TOTAL       | 2895  | 2029  | 2178 | 2116 | 2252 | 2675 | 6889  | 5719  | 3263 | 1788  | 1166  | 1261 |
| MEAN        | 93.4  | 67.6  | 70.3 | 68.3 | 80.4 | 86.3 | 230   | 184   | 109  | 57.7  | 37.6  | 42.0 |
| MAX         | 112   | 90    | 74   | 84   | 90   | 100  | 652   | 448   | 383  | 93    | 84    | 53   |
| MIN         | 80    | 50    | 60   | 55   | 70   | 74   | 74    | 85    | 48   | 38    | 16    | 26   |
| AC-FT       | 5740  | 4020  | 4320 | 4200 | 4470 | 5310 | 13660 | 11340 | 6470 | 3550  | 2310  | 2500 |
| CAL YR 1986 | TOTAL | 39591 |      | MEAN | 108  | MAX  | 606   | MIN   | 18   | AC-FT | 78530 |      |
| WTR YR 1987 | TOTAL | 34231 |      | MEAN | 93.8 | MAX  | 652   | MIN   | 16   | AC-FT | 67900 |      |

06274300 BIGHORN RIVER AT BASIN, WY

LOCATION.--Lat 44°23'00", long 108°02'08", in SE1/4 NW1/4 NE1/4 sec.21, T.51 N., R.93 W., Big Horn County, Hydrologic Unit 10080007, on left bank 10 ft downstream from county bridge on E Street, 0.2 mi northeast of Big Horn County Courthouse in Basin, and 1.8 mi downstream from Antelope Creek.

DRAINAGE AREA.--13,223 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,821.29 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 11-17, Nov. 29 to Dec. 17, and Dec. 19 to Feb. 17. Records fair except those for Oct. 1 to Feb. 16 and Sept. 6-30, which are poor. Diversions for irrigation of about 226,000 acres upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft<sup>3</sup>/s, June 9, 1986, gage height, 8.54 ft; minimum daily, 470 ft<sup>3</sup>/s, July 9, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,620 ft<sup>3</sup>/s, June 9, gage height, 7.87 ft; maximum gage height, 8.62 ft, Jan. 7 (backwater from ice); minimum daily discharge, 470 ft<sup>3</sup>/s, July 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT    | NOV    | DEC   | JAN   | FEB   | MAR    | APR    | MAY   | JUN    | JUL   | AUG     | SEP   |
|-------------|--------|--------|-------|-------|-------|--------|--------|-------|--------|-------|---------|-------|
| 1           | 1780   | 1760   | 1100  | 1400  | 1100  | 1550   | 1740   | 2290  | 1560   | 545   | 839     | 1180  |
| 2           | 2000   | 1770   | 1100  | 1380  | 1300  | 1580   | 1720   | 2280  | 1920   | 519   | 870     | 1160  |
| 3           | 2340   | 1750   | 1100  | 1360  | 1670  | 1660   | 1720   | 2230  | 1790   | 598   | 868     | 1160  |
| 4           | 2000   | 1790   | 1100  | 1340  | 1720  | 1800   | 1700   | 1860  | 1640   | 687   | 810     | 1180  |
| 5           | 1840   | 1780   | 1100  | 1320  | 1800  | 2140   | 1700   | 1650  | 1330   | 701   | 761     | 1370  |
| 6           | 1900   | 1830   | 1100  | 1300  | 1800  | 2810   | 1720   | 1590  | 1170   | 724   | 825     | 1520  |
| 7           | 1780   | 1890   | 1100  | 1290  | 1800  | 2710   | 1730   | 1560  | 1280   | 672   | 742     | 1440  |
| 8           | 1790   | 1800   | 1100  | 1270  | 1800  | 2220   | 1740   | 1550  | 4830   | 558   | 1190    | 1480  |
| 9           | 1800   | 1790   | 1100  | 1200  | 1800  | 1960   | 1720   | 1490  | 6790   | 470   | 1130    | 1540  |
| 10          | 1810   | 1720   | 1300  | 1080  | 1800  | 1850   | 1650   | 1270  | 5060   | 527   | 989     | 1540  |
| 11          | 1810   | 1710   | 1490  | 1000  | 1720  | 1880   | 1610   | 1220  | 3520   | 1230  | 904     | 1510  |
| 12          | 1840   | 1710   | 1600  | 1000  | 1700  | 1990   | 1630   | 1140  | 2980   | 1840  | 856     | 1510  |
| 13          | 1880   | 1710   | 1680  | 1000  | 1620  | 1840   | 1610   | 1060  | 2560   | 1590  | 851     | 1490  |
| 14          | 1880   | 1700   | 1670  | 940   | 1610  | 1800   | 1580   | 1050  | 2270   | 1340  | 884     | 1510  |
| 15          | 1810   | 1700   | 1650  | 900   | 1600  | 1790   | 1590   | 1050  | 2090   | 1130  | 930     | 1500  |
| 16          | 1770   | 1700   | 1670  | 900   | 1600  | 1790   | 1550   | 1120  | 1860   | 1030  | 1380    | 1540  |
| 17          | 1720   | 1700   | 1700  | 900   | 1630  | 1810   | 1540   | 1450  | 1580   | 980   | 1120    | 1660  |
| 18          | 1720   | 1690   | 1670  | 900   | 1650  | 1790   | 1530   | 1700  | 1390   | 994   | 928     | 1780  |
| 19          | 1810   | 1560   | 1520  | 900   | 1640  | 1780   | 1600   | 1450  | 1310   | 1180  | 873     | 1740  |
| 20          | 1810   | 1540   | 1500  | 810   | 1590  | 1770   | 1700   | 1320  | 1250   | 1130  | 821     | 1680  |
| 21          | 1750   | 1640   | 1500  | 790   | 1580  | 1730   | 1670   | 1320  | 1180   | 1020  | 805     | 1660  |
| 22          | 1750   | 1610   | 1500  | 800   | 1580  | 1730   | 1550   | 1320  | 1090   | 906   | 830     | 1640  |
| 23          | 1800   | 1600   | 1500  | 800   | 1580  | 1730   | 1500   | 1210  | 1100   | 917   | 836     | 1610  |
| 24          | 1790   | 1590   | 1500  | 810   | 1590  | 1720   | 1480   | 1170  | 1050   | 911   | 897     | 1600  |
| 25          | 1800   | 1490   | 1500  | 850   | 1560  | 1760   | 1590   | 1160  | 933    | 851   | 1100    | 1590  |
| 26          | 1790   | 1490   | 1500  | 900   | 1540  | 1790   | 1890   | 1150  | 821    | 885   | 1130    | 1570  |
| 27          | 1730   | 1500   | 1480  | 1000  | 1540  | 1760   | 2250   | 1890  | 764    | 959   | 1330    | 1560  |
| 28          | 1730   | 1520   | 1480  | 1000  | 1550  | 1740   | 2410   | 2730  | 673    | 1110  | 1350    | 1540  |
| 29          | 1750   | 1380   | 1470  | 1000  | ---   | 1730   | 2630   | 2020  | 625    | 1070  | 1310    | 1600  |
| 30          | 1760   | 1230   | 1460  | 1000  | ---   | 1710   | 2370   | 2080  | 585    | 998   | 1270    | 1580  |
| 31          | 1770   | ---    | 1380  | 1000  | ---   | 1720   | ---    | 1590  | ---    | 972   | 1260    | ---   |
| TOTAL       | 56510  | 49650  | 43620 | 32140 | 45470 | 57640  | 52420  | 47970 | 57001  | 29044 | 30689   | 45440 |
| MEAN        | 1823   | 1655   | 1407  | 1037  | 1624  | 1859   | 1747   | 1547  | 1900   | 937   | 990     | 1515  |
| MAX         | 2340   | 1890   | 1700  | 1400  | 1800  | 2810   | 2630   | 2730  | 6790   | 1840  | 1380    | 1780  |
| MIN         | 1720   | 1230   | 1100  | 790   | 1100  | 1550   | 1480   | 1050  | 585    | 470   | 742     | 1160  |
| AC-FT       | 112100 | 98480  | 86520 | 63750 | 90190 | 114300 | 104000 | 95150 | 113100 | 57610 | 60870   | 90130 |
| CAL YR 1986 | TOTAL  | 841997 |       | MEAN  | 2307  | MAX    | 10400  | MIN   | 578    | AC-FT | 1670000 |       |
| WTR YR 1987 | TOTAL  | 547594 |       | MEAN  | 1500  | MAX    | 6790   | MIN   | 470    | AC-FT | 1086000 |       |

## YELLOWSTONE RIVER BASIN

06274300 BIGHORN RIVER AT BASIN, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1984 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| NOV<br>18... | 1315 | 1710                                            | 790                                               | 8.2                            | 1.5                                  | 658                                                  | 12.8                                |
| FEB<br>03... | 1330 | 1670                                            | 910                                               | 8.3                            | 0.0                                  | 668                                                  | 13.4                                |
| APR<br>21... | 0930 | 1700                                            | 760                                               | 8.2                            | 10.0                                 | 672                                                  | 10.1                                |
| MAY<br>28... | 1500 | 2670                                            | --                                                | --                             | 16.0                                 | --                                                   | --                                  |
| JUN<br>30... | 0740 | 565                                             | --                                                | --                             | 20.0                                 | --                                                   | --                                  |
| JUL<br>06... | 1610 | 662                                             | 1100                                              | 8.4                            | 22.0                                 | 654                                                  | 7.6                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| NOV<br>18... | 106                                                            | K46                                                            | <0.1                                                 | <0.01                                                | --                                                   | 0.7                                                                | 0.01                                        |
| FEB<br>03... | 105                                                            | 88                                                             | 0.2                                                  | 0.06                                                 | 1.1                                                  | 1.2                                                                | 0.14                                        |
| APR<br>21... | 102                                                            | K26                                                            | 0.2                                                  | 0.07                                                 | 0.53                                                 | 0.6                                                                | 0.03                                        |
| MAY<br>28... | --                                                             | --                                                             | 1.5                                                  | 0.08                                                 | 20                                                   | 20                                                                 | 10                                          |
| JUN<br>30... | --                                                             | --                                                             | 0.5                                                  | 0.06                                                 | 1.1                                                  | 1.2                                                                | 0.09                                        |
| JUL<br>06... | 102                                                            | 250                                                            | 1.2                                                  | 0.08                                                 | 2.1                                                  | 2.2                                                                | 1.7                                         |

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

## 06275000 WOOD RIVER AT SUNSHINE, WY

LOCATION.--Lat 44°02'15", long 108°58'24", in NW1/4 SW1/4 sec.15, T.47 N., R.101 W., Park County, Hydrologic Unit 10080009, on right bank at bridge on county road, 1.0 mi downstream from Ernest May Ranch, 5.2 mi downstream from Dick Creek, and 10 mi southwest of Meeteetse.

DRAINAGE AREA.--194 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--August 1945 to current year.

REVISED RECORDS.--WSP 1309: 1947(M). WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,450 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 18, 1952, and Oct. 28, 1953, to June 15, 1963, water-stage recorder at site 2.0 mi upstream at different datum. Sept. 18, 1952, to Oct. 27, 1953, nonrecording gage at site 2.0 mi upstream at different datum. June 16, 1963, to Aug. 13, 1967, water-stage recorder at site 1.4 mi upstream at different datum. Aug. 14 to Oct. 5, 1967, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Nov. 6 to Mar. 12, and Mar. 17 to Apr. 28. Records good except those for estimated daily discharges, which are poor. Water diverts upstream from station to Lower Sunshine Reservoir since 1972. Diversion upstream from station for irrigation of about 3,200 acres, of which about 1,000 acres are downstream from station.

AVERAGE DISCHARGE.--27 years (water years 1946-72), prior to Lower Sunshine diversion, 117 ft<sup>3</sup>/s, 84,770 acre-ft/yr; 15 years (water years 1973-87), 90.4 ft<sup>3</sup>/s, 65,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,080 ft<sup>3</sup>/s, June 15, 1963, gage height, 7.00 ft, from floodmark, site and datum then in use, from contracted-opening measurement of peak flow; maximum gage height, 8.57 ft, May 18, 1973; minimum daily discharge, 0.40 ft<sup>3</sup>/s, Mar. 13, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 863 ft<sup>3</sup>/s, July 29, gage height, 6.05 ft; minimum daily, 8.0 ft<sup>3</sup>/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR   | APR  | MAY   | JUN   | JUL   | AUG   | SEP  |
|-------------|-------|---------|-------|-------|-------|-------|------|-------|-------|-------|-------|------|
| 1           | 19    | 12      | 10    | 10    | 13    | 9.5   | 11   | 158   | 46    | 218   | 248   | 113  |
| 2           | 20    | 13      | 9.5   | 11    | 13    | 10    | 10   | 166   | 42    | 176   | 224   | 114  |
| 3           | 17    | 13      | 9.5   | 11    | 12    | 11    | 11   | 121   | 41    | 148   | 210   | 112  |
| 4           | 17    | 12      | 10    | 12    | 12    | 12    | 13   | 111   | 100   | 155   | 184   | 119  |
| 5           | 17    | 11      | 10    | 11    | 12    | 13    | 16   | 126   | 193   | 149   | 158   | 117  |
| 6           | 16    | 11      | 10    | 10    | 12    | 13    | 20   | 150   | 214   | 132   | 146   | 111  |
| 7           | 16    | 11      | 9.5   | 9.5   | 13    | 12    | 21   | 168   | 263   | 122   | 164   | 110  |
| 8           | 14    | 10      | 9.5   | 9.5   | 13    | 10    | 19   | 192   | 478   | 111   | 154   | 105  |
| 9           | 14    | 9.5     | 9.5   | 10    | 14    | 9.0   | 15   | 211   | 250   | 105   | 134   | 99   |
| 10          | 14    | 9.0     | 10    | 11    | 14    | 9.0   | 13   | 210   | 231   | 158   | 130   | 98   |
| 11          | 14    | 8.5     | 10    | 12    | 13    | 9.5   | 13   | 214   | 236   | 181   | 119   | 96   |
| 12          | 16    | 8.5     | 10    | 13    | 13    | 10    | 13   | 215   | 263   | 186   | 114   | 95   |
| 13          | 14    | 8.5     | 11    | 12    | 13    | 11    | 14   | 242   | 227   | 188   | 108   | 91   |
| 14          | 14    | 9.0     | 11    | 10    | 12    | 11    | 16   | 226   | 234   | 177   | 109   | 93   |
| 15          | 14    | 9.5     | 12    | 9.0   | 12    | 9.9   | 19   | 277   | 233   | 159   | 107   | 93   |
| 16          | 14    | 10      | 13    | 8.0   | 12    | 9.8   | 25   | 287   | 225   | 142   | 111   | 94   |
| 17          | 14    | 10      | 13    | 8.5   | 12    | 10    | 35   | 327   | 208   | 172   | 105   | 91   |
| 18          | 14    | 10      | 13    | 9.0   | 12    | 10    | 45   | 310   | 183   | 243   | 102   | 88   |
| 19          | 13    | 10      | 13    | 8.5   | 11    | 10    | 35   | 267   | 165   | 203   | 97    | 87   |
| 20          | 13    | 10      | 12    | 8.5   | 11    | 9.5   | 25   | 242   | 150   | 176   | 95    | 85   |
| 21          | 13    | 10      | 12    | 8.5   | 11    | 9.0   | 28   | 198   | 148   | 169   | 97    | 83   |
| 22          | 13    | 10      | 12    | 9.0   | 11    | 9.0   | 40   | 180   | 147   | 166   | 103   | 81   |
| 23          | 13    | 10      | 12    | 10    | 10    | 9.0   | 55   | 164   | 126   | 146   | 106   | 78   |
| 24          | 13    | 10      | 12    | 11    | 9.5   | 9.5   | 80   | 165   | 117   | 134   | 135   | 77   |
| 25          | 13    | 10      | 12    | 13    | 9.0   | 10    | 110  | 163   | 118   | 128   | 158   | 77   |
| 26          | 13    | 10      | 12    | 13    | 9.0   | 10    | 130  | 173   | 116   | 119   | 169   | 77   |
| 27          | 12    | 10      | 12    | 13    | 9.0   | 9.0   | 140  | 106   | 107   | 197   | 155   | 76   |
| 28          | 12    | 10      | 12    | 13    | 9.0   | 8.5   | 147  | 55    | 105   | 275   | 138   | 73   |
| 29          | 12    | 10      | 12    | 13    | ---   | 9.0   | 149  | 56    | 105   | 397   | 126   | 68   |
| 30          | 12    | 10      | 11    | 12    | ---   | 9.5   | 151  | 48    | 179   | 221   | 119   | 68   |
| 31          | 12    | ---     | 10    | 12    | ---   | 10    | ---  | 46    | ---   | 262   | 113   | ---  |
| TOTAL       | 442   | 305.5   | 344.5 | 331.0 | 326.5 | 311.7 | 1419 | 5574  | 5250  | 5515  | 4238  | 2769 |
| MEAN        | 14.3  | 10.2    | 11.1  | 10.7  | 11.7  | 10.1  | 47.3 | 180   | 175   | 178   | 137   | 92.3 |
| MAX         | 20    | 13      | 13    | 13    | 14    | 13    | 151  | 327   | 478   | 397   | 248   | 119  |
| MIN         | 12    | 8.5     | 9.5   | 8.0   | 9.0   | 8.5   | 10   | 46    | 41    | 105   | 95    | 68   |
| AC-FT       | 877   | 606     | 683   | 657   | 648   | 618   | 2810 | 11060 | 10410 | 10940 | 8410  | 5490 |
| CAL YR 1986 | TOTAL | 23029.5 |       | MEAN  | 63.1  | MAX   | 384  | MIN   | 1.2   | AC-FT | 45680 |      |
| WTR YR 1987 | TOTAL | 26826.2 |       | MEAN  | 73.5  | MAX   | 478  | MIN   | 8.0   | AC-FT | 53210 |      |



## YELLOWSTONE RIVER BASIN

06276500 GREYBULL RIVER AT MEETEETSE, WY

LOCATION.--Lat 44°09'20", long 108°52'35", in sec.4, T.48 N., R.100 W., Park County, Hydrologic Unit 10080009, on right bank at Meeteetse, 0.3 mi upstream from bridge on State Highway 120, and 3.0 mi upstream from Meeteetse Creek.

DRAINAGE AREA.--681 mi<sup>2</sup>.

PERIOD OF RECORD.--June to December 1897, April to October 1903 (gage heights and discharge measurements only), July 1920 to current year (no winter records since 1971). Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1923(M), 1924, 1925(M). WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,739.42 ft above National Geodetic Vertical Datum of 1929. See WSP 1916 for history of changes prior to Apr. 28, 1938. Apr. 28, 1938, to May 24, 1961, at site on left bank at datum 2.00 ft higher. May 25, 1961, to May 9, 1967, at site 100 ft downstream at present datum.

REMARKS.--Estimated daily discharges: Apr. 1-3 and Aug. 9. Records good. Some regulation by Sunshine Reservoir beginning May 1940, capacity, 52,990 acre-ft, and Lower Sunshine Reservoir beginning December 1972, capacity, 58,900 acre-ft. Diversions for irrigation of about 10,600 acres upstream from station. Several diversions upstream from station for irrigation downstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--51 years (water years 1921-71), 347 ft<sup>3</sup>/s, 251,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft<sup>3</sup>/s, June 15, 1963, gage height, 9.20 ft, from floodmark, from rating curve extended above 4,600 ft<sup>3</sup>/s on basis of velocity-area study; minimum daily, 16 ft<sup>3</sup>/s, Mar. 4, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,840 ft<sup>3</sup>/s, June 8, gage height, 5.37 ft; minimum daily during period of operation, 42 ft<sup>3</sup>/s, Apr. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR  | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-----|-----|-----|-----|-----|-----|------|-------|-------|-------|-------|-------|
| 1     |     |     |     |     |     |     | 42   | 512   | 152   | 960   | 427   | 405   |
| 2     |     |     |     |     |     |     | 48   | 537   | 138   | 748   | 421   | 411   |
| 3     |     |     |     |     |     |     | 56   | 432   | 127   | 702   | 465   | 416   |
| 4     |     |     |     |     |     |     | 59   | 416   | 160   | 651   | 500   | 427   |
| 5     |     |     |     |     |     |     | 64   | 544   | 323   | 630   | 519   | 432   |
| 6     |     |     |     |     |     |     | 70   | 687   | 405   | 651   | 550   | 405   |
| 7     |     |     |     |     |     |     | 69   | 772   | 544   | 710   | 616   | 411   |
| 8     |     |     |     |     |     |     | 65   | 804   | 1040  | 748   | 623   | 390   |
| 9     |     |     |     |     |     |     | 52   | 854   | 717   | 740   | 563   | 374   |
| 10    |     |     |     |     |     |     | 51   | 764   | 448   | 821   | 550   | 353   |
| 11    |     |     |     |     |     |     | 54   | 695   | 427   | 512   | 531   | 348   |
| 12    |     |     |     |     |     |     | 54   | 788   | 465   | 582   | 500   | 333   |
| 13    |     |     |     |     |     |     | 49   | 898   | 416   | 651   | 489   | 328   |
| 14    |     |     |     |     |     |     | 49   | 854   | 432   | 702   | 489   | 323   |
| 15    |     |     |     |     |     |     | 52   | 772   | 427   | 717   | 489   | 323   |
| 16    |     |     |     |     |     |     | 52   | 812   | 460   | 717   | 500   | 313   |
| 17    |     |     |     |     |     |     | 51   | 764   | 432   | 821   | 471   | 313   |
| 18    |     |     |     |     |     |     | 49   | 637   | 437   | 812   | 448   | 318   |
| 19    |     |     |     |     |     |     | 48   | 531   | 416   | 623   | 443   | 308   |
| 20    |     |     |     |     |     |     | 78   | 454   | 411   | 651   | 454   | 308   |
| 21    |     |     |     |     |     |     | 170  | 374   | 471   | 680   | 465   | 299   |
| 22    |     |     |     |     |     |     | 186  | 338   | 569   | 772   | 454   | 273   |
| 23    |     |     |     |     |     |     | 132  | 299   | 569   | 695   | 454   | 260   |
| 24    |     |     |     |     |     |     | 132  | 286   | 525   | 680   | 525   | 260   |
| 25    |     |     |     |     |     |     | 217  | 286   | 525   | 702   | 616   | 281   |
| 26    |     |     |     |     |     |     | 248  | 338   | 576   | 695   | 500   | 277   |
| 27    |     |     |     |     |     |     | 318  | 288   | 637   | 717   | 416   | 260   |
| 28    |     |     |     |     |     |     | 411  | 127   | 666   | 725   | 421   | 256   |
| 29    |     |     |     |     |     |     | 448  | 182   | 710   | 796   | 405   | 248   |
| 30    |     |     |     |     |     |     | 531  | 160   | 854   | 489   | 379   | 248   |
| 31    |     |     |     |     |     |     | ---  | 160   | ---   | 494   | 400   | ---   |
| TOTAL |     |     |     |     |     |     | 3905 | 16365 | 14479 | 21594 | 15083 | 9901  |
| MEAN  |     |     |     |     |     |     | 130  | 528   | 483   | 697   | 487   | 330   |
| MAX   |     |     |     |     |     |     | 531  | 898   | 1040  | 960   | 623   | 432   |
| MIN   |     |     |     |     |     |     | 42   | 127   | 127   | 489   | 379   | 248   |
| AC-FT |     |     |     |     |     |     | 7750 | 32460 | 28720 | 42830 | 29920 | 19640 |

06277500 GREYBULL RIVER NEAR BASIN, WY

LOCATION.--Lat 44°24'24", long 108°11'10", in NE1/4 NW1/4 SW1/4 sec.8, T.51 N., R.94 W., Big Horn County, Hydrologic Unit 10080009, at former gaging station, at bridge on State Secondary Highway 0200, 3.0 mi upstream from Dorsey Creek, and 8.0 mi west of Basin.

DRAINAGE AREA.--1,115 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1951-53, 1965 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| MAY<br>28... | 1400 | 447                                             | 14.0                                 | 1.4                                                  | 0.08                                                 | 4.3                                                  | 4.4                                                                | 3.6                                         |
| JUN<br>30... | 0840 | 24                                              | 21.0                                 | 0.8                                                  | 0.07                                                 | 0.83                                                 | 0.9                                                                | 0.11                                        |

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| MAY<br>01... | 0800 | 26                                              | 13.0                                 | 0.01                                                            | 0.01                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |
| JUN<br>01... | 0710 | 70                                              | 10.0                                 | 0.04                                                            | 0.01                                                         | 0.02                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>08... | 1430 | 18                                              | 23.0                                 | 0.19                                                            | 0.01                                                         | 0.50                      | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>19... | 1830 | 17                                              | 20.0                                 | 0.03                                                            | 0.01                                                         | 0.07                      | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>30... | 0900 | 32                                              | 9.0                                  | <0.01                                                           | 0.01                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |

## 06278300 SHELL CREEK ABOVE SHELL RESERVOIR, WY

LOCATION.--Lat 44°30'29", long 107°24'11", in sec.1, T.52 N., R.88 W., Big Horn County, Hydrologic Unit 10080010, Bighorn National Forest, on right bank 0.2 mi upstream from Shell Reservoir, 1.1 mi downstream from Buckley Creek, 6.0 mi southeast of Shell Creek ranger station, and 19 mi east of Shell.

DRAINAGE AREA.--23.1 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1956 to current year. Prior to October 1969, published as Shell Creek above Shell Creek Reservoir.

REVISED RECORD.--WSP 1629: 1958. WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 9,050 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 12, 15-19, 29, Oct. 31 to Apr. 15 and Aug. 14 to Sept. 20. Records good except those for estimated daily discharges, which are poor. No diversions upstream from station.

AVERAGE DISCHARGE.--31 years, 35.5 ft<sup>3</sup>/s, 25,720 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,870 ft<sup>3</sup>/s, June 15, 1963, gage height, 7.84 ft, from floodmarks, from rating curve extended above 725 ft<sup>3</sup>/s on basis of velocity-area study; minimum daily discharge, 0.60 ft<sup>3</sup>/s, Mar. 7, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| May 16 | 2400 | *572                              | *5.25               | June 8 | 0200 | 509                               | 5.02                |

Minimum daily discharge, 2.1 ft<sup>3</sup>/s, Mar. 26-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN  | FEB  | MAR  | APR   | MAY  | JUN  | JUL   | AUG   | SEP  |
|-------------|-------|---------|-------|------|------|------|-------|------|------|-------|-------|------|
| 1           | 11    | 8.6     | 6.4   | 3.3  | 2.9  | 2.6  | 2.3   | 198  | 132  | 20    | 23    | 15   |
| 2           | 11    | 8.4     | 6.2   | 3.3  | 2.9  | 2.7  | 2.4   | 163  | 88   | 19    | 21    | 15   |
| 3           | 11    | 8.4     | 6.0   | 3.2  | 2.9  | 2.8  | 2.5   | 73   | 71   | 17    | 20    | 15   |
| 4           | 11    | 8.6     | 5.8   | 3.2  | 2.9  | 2.9  | 2.7   | 57   | 65   | 17    | 19    | 17   |
| 5           | 11    | 8.8     | 5.6   | 3.1  | 2.9  | 3.0  | 3.0   | 89   | 70   | 17    | 18    | 16   |
| 6           | 11    | 8.4     | 5.4   | 3.1  | 2.9  | 3.1  | 3.5   | 134  | 76   | 16    | 17    | 16   |
| 7           | 13    | 8.0     | 5.0   | 3.0  | 2.9  | 3.2  | 3.8   | 162  | 110  | 16    | 19    | 16   |
| 8           | 13    | 7.4     | 4.9   | 2.9  | 3.0  | 3.2  | 4.0   | 185  | 312  | 15    | 20    | 15   |
| 9           | 13    | 6.8     | 4.6   | 2.8  | 3.0  | 3.1  | 4.1   | 210  | 214  | 16    | 18    | 15   |
| 10          | 13    | 6.2     | 4.4   | 2.7  | 3.0  | 3.0  | 4.2   | 193  | 165  | 32    | 17    | 15   |
| 11          | 13    | 6.4     | 4.5   | 2.7  | 3.0  | 2.9  | 4.2   | 167  | 120  | 55    | 16    | 15   |
| 12          | 12    | 6.6     | 4.6   | 2.6  | 3.0  | 2.9  | 4.2   | 181  | 99   | 53    | 16    | 15   |
| 13          | 12    | 6.8     | 4.6   | 2.6  | 3.0  | 2.8  | 4.4   | 181  | 85   | 38    | 15    | 15   |
| 14          | 12    | 7.0     | 4.7   | 2.5  | 2.9  | 2.8  | 4.7   | 170  | 75   | 31    | 15    | 15   |
| 15          | 12    | 7.2     | 4.7   | 2.5  | 2.9  | 2.7  | 5.0   | 188  | 66   | 26    | 15    | 15   |
| 16          | 12    | 7.2     | 4.7   | 2.4  | 2.8  | 2.7  | 5.4   | 210  | 59   | 24    | 15    | 15   |
| 17          | 12    | 7.4     | 4.7   | 2.4  | 2.8  | 2.6  | 6.3   | 324  | 52   | 28    | 14    | 16   |
| 18          | 11    | 7.4     | 4.6   | 2.4  | 2.8  | 2.6  | 15    | 172  | 48   | 31    | 14    | 16   |
| 19          | 9.4   | 7.4     | 4.6   | 2.4  | 2.7  | 2.5  | 25    | 133  | 55   | 26    | 13    | 16   |
| 20          | 10    | 7.4     | 4.5   | 2.5  | 2.7  | 2.5  | 13    | 116  | 50   | 22    | 13    | 17   |
| 21          | 10    | 7.4     | 4.4   | 2.5  | 2.7  | 2.4  | 5.5   | 99   | 42   | 23    | 13    | 17   |
| 22          | 11    | 7.2     | 4.3   | 2.5  | 2.6  | 2.4  | 7.2   | 75   | 39   | 39    | 14    | 16   |
| 23          | 11    | 7.2     | 4.3   | 2.5  | 2.6  | 2.3  | 15    | 62   | 39   | 30    | 14    | 16   |
| 24          | 11    | 7.2     | 4.1   | 2.6  | 2.5  | 2.3  | 19    | 57   | 34   | 26    | 16    | 14   |
| 25          | 11    | 7.0     | 4.0   | 2.6  | 2.5  | 2.2  | 30    | 61   | 31   | 23    | 22    | 14   |
| 26          | 11    | 7.0     | 3.9   | 2.6  | 2.4  | 2.1  | 67    | 63   | 28   | 22    | 21    | 14   |
| 27          | 11    | 6.8     | 3.8   | 2.7  | 2.4  | 2.1  | 132   | 69   | 25   | 31    | 19    | 13   |
| 28          | 10    | 6.8     | 3.7   | 2.7  | 2.5  | 2.1  | 159   | 79   | 23   | 27    | 18    | 13   |
| 29          | 10    | 6.6     | 3.6   | 2.8  | ---  | 2.1  | 142   | 100  | 22   | 33    | 17    | 12   |
| 30          | 10    | 6.4     | 3.5   | 2.8  | ---  | 2.1  | 157   | 104  | 21   | 30    | 16    | 12   |
| 31          | 9.6   | ---     | 3.4   | 2.8  | ---  | 2.2  | ---   | 140  | ---  | 26    | 15    | ---  |
| TOTAL       | 349.0 | 220.0   | 143.5 | 84.7 | 78.1 | 80.9 | 853.4 | 4215 | 2316 | 829   | 523   | 451  |
| MEAN        | 11.3  | 7.33    | 4.63  | 2.73 | 2.79 | 2.61 | 28.4  | 136  | 77.2 | 26.7  | 16.9  | 15.0 |
| MAX         | 13    | 8.8     | 6.4   | 3.3  | 3.0  | 3.2  | 159   | 324  | 312  | 55    | 23    | 17   |
| MIN         | 9.4   | 6.2     | 3.4   | 2.4  | 2.4  | 2.1  | 2.3   | 57   | 21   | 15    | 13    | 12   |
| AC-FT       | 692   | 436     | 285   | 168  | 155  | 160  | 1690  | 8360 | 4590 | 1640  | 1040  | 895  |
| CAL YR 1986 | TOTAL | 12047.7 |       | MEAN | 33.0 | MAX  | 480   | MIN  | 1.8  | AC-FT | 23900 |      |
| WTR YR 1987 | TOTAL | 10143.6 |       | MEAN | 27.8 | MAX  | 324   | MIN  | 2.1  | AC-FT | 20120 |      |

06278500 SHELL CREEK NEAR SHELL, WY

LOCATION.--Lat 44°33'54", long 107°42'44", in SE1/4 SW1/4 sec.17, T.53 N., R.90 W., Big Horn County, Hydrologic Unit 10080010, on right bank 0.9 mi upstream from White Creek and 5.0 mi northeast of Shell.

DRAINAGE AREA.--145 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1940 to current year (no winter records since 1971). Prior to December 1940, monthly discharge only, published in WSP 1309.

REVISED RECORDS.--WSP 1239: 1941, 1945(M). WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,370.05 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharge. Records good. Some regulation by two small reservoirs, capacity, 3,650 acre-ft. Diversions upstream from station for irrigation of about 80 acres downstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--31 years (water years 1941-71), 119 ft<sup>3</sup>/s, 86,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,020 ft<sup>3</sup>/s, June 24, 1945, gage height, 7.49 ft, from rating curve extended above 1,600 ft<sup>3</sup>/s; minimum daily, 18 ft<sup>3</sup>/s, Mar. 5, 7, 1950, Jan. 30, 31, 1951.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                 | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|--------------------------------------|------|-----------------------------------|---------------------|
| May 17 | 1200 | *673                              | *3.94               | No peak greater than base discharge. |      |                                   |                     |

Minimum daily discharge during period of operation, 29 ft<sup>3</sup>/s, Apr. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR  | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|------|-------|-------|------|------|------|
| 1     |     |     |     |     |     |     | 33   | 503   | 319   | 106  | 91   | 84   |
| 2     |     |     |     |     |     |     | 29   | 471   | 254   | 105  | 82   | 82   |
| 3     |     |     |     |     |     |     | 33   | 241   | 219   | 102  | 80   | 84   |
| 4     |     |     |     |     |     |     | 35   | 186   | 197   | 101  | 76   | 89   |
| 5     |     |     |     |     |     |     | 40   | 229   | 192   | 101  | 98   | 102  |
| 6     |     |     |     |     |     |     | 43   | 299   | 190   | 96   | 96   | 89   |
| 7     |     |     |     |     |     |     | 44   | 332   | 197   | 92   | 110  | 91   |
| 8     |     |     |     |     |     |     | 45   | 360   | 433   | 88   | 116  | 88   |
| 9     |     |     |     |     |     |     | 42   | 363   | 443   | 89   | 101  | 85   |
| 10    |     |     |     |     |     |     | 37   | 381   | 415   | 108  | 98   | 84   |
| 11    |     |     |     |     |     |     | 37   | 327   | 317   | 165  | 98   | 82   |
| 12    |     |     |     |     |     |     | 35   | 303   | 273   | 155  | 98   | 81   |
| 13    |     |     |     |     |     |     | 33   | 332   | 239   | 128  | 96   | 80   |
| 14    |     |     |     |     |     |     | 34   | 288   | 221   | 113  | 95   | 78   |
| 15    |     |     |     |     |     |     | 40   | 294   | 201   | 103  | 99   | 80   |
| 16    |     |     |     |     |     |     | 49   | 303   | 190   | 98   | 98   | 85   |
| 17    |     |     |     |     |     |     | 58   | 536   | 176   | 105  | 95   | 85   |
| 18    |     |     |     |     |     |     | 81   | 357   | 168   | 116  | 92   | 81   |
| 19    |     |     |     |     |     |     | 82   | 280   | 176   | 103  | 91   | 81   |
| 20    |     |     |     |     |     |     | 55   | 237   | 175   | 95   | 89   | 80   |
| 21    |     |     |     |     |     |     | 52   | 234   | 155   | 91   | 88   | 78   |
| 22    |     |     |     |     |     |     | 70   | 199   | 150   | 99   | 91   | 77   |
| 23    |     |     |     |     |     |     | 102  | 172   | 155   | 103  | 89   | 76   |
| 24    |     |     |     |     |     |     | 158  | 161   | 140   | 95   | 89   | 76   |
| 25    |     |     |     |     |     |     | 227  | 176   | 133   | 86   | 101  | 76   |
| 26    |     |     |     |     |     |     | 286  | 172   | 124   | 85   | 108  | 76   |
| 27    |     |     |     |     |     |     | 411  | 199   | 119   | 98   | 99   | 74   |
| 28    |     |     |     |     |     |     | 505  | 214   | 114   | 101  | 92   | 74   |
| 29    |     |     |     |     |     |     | 451  | 269   | 114   | 108  | 89   | 76   |
| 30    |     |     |     |     |     |     | 464  | 279   | 110   | 106  | 88   | 74   |
| 31    |     |     |     |     |     |     | ---  | 306   | ---   | 96   | 86   | ---  |
| TOTAL |     |     |     |     |     |     | 3611 | 9003  | 6309  | 3237 | 2919 | 2448 |
| MEAN  |     |     |     |     |     |     | 120  | 290   | 210   | 104  | 94.2 | 81.6 |
| MAX   |     |     |     |     |     |     | 505  | 536   | 443   | 165  | 116  | 102  |
| MIN   |     |     |     |     |     |     | 29   | 161   | 110   | 85   | 76   | 74   |
| AC-FT |     |     |     |     |     |     | 7160 | 17860 | 12510 | 6420 | 5790 | 4860 |





## 06279500 BIGHORN RIVER AT KANE, WY

LOCATION.--Lat 44°45'31", long 108°10'51", in NW1/4 NE1/4 SW1/4 sec.9, T.55 N., R.94 W., Big Horn County, Hydrologic Unit 10080010, on right bank 180 ft upstream from Bighorn Canyon National Recreation Area boundary, 0.5 mi upstream from normal high-water line of Bighorn Lake at elevation 3,660 ft, 1.3 mi upstream from Five Springs Creek, and 5.9 mi south of Kane.

DRAINAGE AREA.--15,765 mi<sup>2</sup>. Area at sites used prior to May 17, 1956, 15,846 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year.

REVISED RECORDS.--WSP 1309: 1929(M). WSP 1509: 1929. WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,660 ft above National Geodetic Vertical Datum of 1929, from topographic map. Aug. 29, 1928, to Apr. 25, 1932, nonrecording gage, and Apr. 25, 1932, to May 16, 1956, water-stage recorder at site 12.5 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 10-16 and Dec. 11 to Mar. 3. Records good except those for estimated daily discharges, which are poor. Some regulation by Boysen Reservoir (station 06258900) since October 1951. Diversions for irrigation of about 376,000 acres upstream from station. U.S. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--59 years, 2,283 ft<sup>3</sup>/s, 1,654,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,200 ft<sup>3</sup>/s, June 16, 1935, gage height, 11.10 ft, site and datum then in use; minimum daily, 179 ft<sup>3</sup>/s, July 22, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1923, 14.8 ft, Sept. 30, 1923, site and datum in use April 1932 to May 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,670 ft<sup>3</sup>/s, June 9, gage height, 7.08 ft; maximum gage height, 8.42 ft, Nov. 14 (backwater from ice); minimum daily discharge, 687 ft<sup>3</sup>/s, July 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT    | NOV     | DEC    | JAN   | FEB    | MAR    | APR    | MAY    | JUN    | JUL   | AUG     | SEP    |
|-------------|--------|---------|--------|-------|--------|--------|--------|--------|--------|-------|---------|--------|
| 1           | 2510   | 2380    | 2350   | 1700  | 1550   | 2210   | 2550   | 3200   | 2810   | 802   | 1170    | 1450   |
| 2           | 2690   | 2370    | 2260   | 1700  | 1670   | 2300   | 2540   | 3220   | 2890   | 821   | 1060    | 1390   |
| 3           | 2970   | 2360    | 1830   | 1680  | 1900   | 2530   | 2500   | 3120   | 3020   | 774   | 965     | 1370   |
| 4           | 2970   | 2360    | 1840   | 1680  | 2450   | 2900   | 2470   | 2690   | 2800   | 906   | 900     | 1410   |
| 5           | 2660   | 2360    | 1840   | 1680  | 2500   | 3070   | 2440   | 2390   | 2480   | 858   | 837     | 1520   |
| 6           | 2560   | 2370    | 1790   | 1670  | 2500   | 3680   | 2470   | 2240   | 1830   | 875   | 844     | 1830   |
| 7           | 2500   | 2440    | 1880   | 1650  | 2500   | 3810   | 2490   | 2230   | 1830   | 794   | 910     | 1790   |
| 8           | 2470   | 2410    | 1820   | 1600  | 2500   | 3570   | 2510   | 2270   | 3680   | 748   | 1010    | 1810   |
| 9           | 2470   | 2370    | 1950   | 1500  | 2500   | 3020   | 2520   | 2290   | 8170   | 687   | 1560    | 1860   |
| 10          | 2500   | 2370    | 1840   | 1450  | 2500   | 2790   | 2420   | 2120   | 6290   | 691   | 1210    | 1800   |
| 11          | 2510   | 2370    | 1880   | 1400  | 2500   | 2750   | 2280   | 1910   | 5050   | 1080  | 1140    | 1760   |
| 12          | 2520   | 2340    | 1900   | 1400  | 2400   | 2720   | 2260   | 1690   | 3940   | 2000  | 1070    | 1740   |
| 13          | 2460   | 2300    | 1910   | 1400  | 2300   | 2690   | 2310   | 1550   | 3420   | 1840  | 1030    | 1710   |
| 14          | 2470   | 2300    | 1930   | 1300  | 2300   | 2670   | 2280   | 1530   | 2890   | 1480  | 1060    | 1670   |
| 15          | 2490   | 2330    | 1940   | 1250  | 2300   | 2660   | 2250   | 1450   | 2680   | 1270  | 1080    | 1630   |
| 16          | 2450   | 2400    | 2000   | 1250  | 2300   | 2660   | 2190   | 1470   | 2370   | 1140  | 1210    | 1600   |
| 17          | 2440   | 2400    | 2050   | 1250  | 2300   | 2630   | 2130   | 1860   | 2080   | 1120  | 1670    | 1680   |
| 18          | 2440   | 2330    | 2000   | 1250  | 2350   | 2650   | 2080   | 2900   | 1840   | 1170  | 1260    | 1790   |
| 19          | 2430   | 2360    | 1930   | 1250  | 2320   | 2650   | 2210   | 2470   | 1650   | 1470  | 1150    | 1830   |
| 20          | 2420   | 2390    | 1800   | 1130  | 2250   | 2600   | 2410   | 2120   | 1620   | 1350  | 1090    | 1820   |
| 21          | 2420   | 2390    | 1810   | 1080  | 2250   | 2550   | 2410   | 1930   | 1460   | 1260  | 1050    | 1840   |
| 22          | 2410   | 2470    | 1810   | 1100  | 2250   | 2480   | 2230   | 2020   | 1360   | 1150  | 1040    | 1820   |
| 23          | 2430   | 2490    | 1810   | 1100  | 2230   | 2470   | 2130   | 1790   | 1350   | 1190  | 1090    | 1760   |
| 24          | 2430   | 2410    | 1810   | 1140  | 2250   | 2440   | 2100   | 1630   | 1340   | 1150  | 1090    | 1750   |
| 25          | 2440   | 2400    | 1810   | 1170  | 2210   | 2430   | 2260   | 1570   | 1210   | 1080  | 1310    | 1730   |
| 26          | 2440   | 2380    | 1800   | 1280  | 2200   | 2520   | 2580   | 1550   | 1070   | 1080  | 1500    | 1730   |
| 27          | 2440   | 2350    | 1800   | 1380  | 2200   | 2540   | 3010   | 3340   | 991    | 1100  | 1670    | 1720   |
| 28          | 2410   | 2360    | 1800   | 1390  | 2200   | 2540   | 3290   | 6960   | 908    | 1140  | 1730    | 1690   |
| 29          | 2380   | 2370    | 1790   | 1400  | ---    | 2480   | 3480   | 3860   | 853    | 1270  | 1630    | 1710   |
| 30          | 2360   | 2370    | 1770   | 1400  | ---    | 2450   | 3320   | 3440   | 833    | 1490  | 1580    | 1750   |
| 31          | 2370   | ---     | 1700   | 1450  | ---    | 2500   | ---    | 3030   | ---    | 1380  | 1540    | ---    |
| TOTAL       | 77460  | 71300   | 58450  | 43080 | 63680  | 83960  | 74120  | 75840  | 74715  | 35166 | 37456   | 50960  |
| MEAN        | 2499   | 2377    | 1885   | 1390  | 2274   | 2708   | 2471   | 2446   | 2491   | 1134  | 1208    | 1699   |
| MAX         | 2970   | 2490    | 2350   | 1700  | 2500   | 3810   | 3480   | 6960   | 8170   | 2000  | 1730    | 1860   |
| MIN         | 2360   | 2300    | 1700   | 1080  | 1550   | 2210   | 2080   | 1450   | 833    | 687   | 837     | 1370   |
| AC-FT       | 153600 | 141400  | 115900 | 85450 | 126300 | 166500 | 147000 | 150400 | 148200 | 69750 | 74290   | 101100 |
| CAL YR 1986 | TOTAL  | 1018236 |        | MEAN  | 2790   | MAX    | 10900  | MIN    | 911    | AC-FT | 2020000 |        |
| WTR YR 1987 | TOTAL  | 746187  |        | MEAN  | 2044   | MAX    | 8170   | MIN    | 687    | AC-FT | 1480000 |        |

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|----------------------------------------------------------------|
| NOV<br>17... | 1100 | 2440                                            | 920                                               | 8.2                            | 0.5                                  | 644                                                  | 12.0                                | 99                                                             |
| DEC<br>15... | 1200 | 1940                                            | 1020                                              | --                             | 0.0                                  | --                                                   | --                                  | --                                                             |
| FEB<br>02... | 1600 | 1640                                            | 840                                               | 8.2                            | 0.0                                  | 660                                                  | 12.6                                | 100                                                            |
| MAR<br>16... | 1130 | 2630                                            | 880                                               | --                             | 7.0                                  | --                                                   | --                                  | --                                                             |
| APR<br>22... | 1100 | 2290                                            | 930                                               | 8.1                            | 11.0                                 | 667                                                  | 9.9                                 | 103                                                            |
| MAY<br>29... | 0850 | 4110                                            | --                                                | --                             | 15.0                                 | --                                                   | --                                  | --                                                             |
| JUN<br>02... | 1030 | 2710                                            | 860                                               | --                             | 14.5                                 | --                                                   | --                                  | --                                                             |
| 30...        | 1210 | 900                                             | --                                                | --                             | 23.0                                 | --                                                   | --                                  | --                                                             |
| JUL<br>07... | 0830 | 793                                             | 1190                                              | 8.2                            | 19.5                                 | 662                                                  | 7.8                                 | 98                                                             |
| AUG<br>20... | 1100 | 1080                                            | 1080                                              | --                             | 19.0                                 | --                                                   | --                                  | --                                                             |
| SEP<br>22... | 1145 | 1840                                            | 940                                               | --                             | 15.0                                 | --                                                   | --                                  | --                                                             |
| 30...        | 1300 | 1780                                            | 920                                               | --                             | 14.5                                 | --                                                   | --                                  | --                                                             |

[illegible]

06279500 BIGHORN RIVER AT KANE, WY--Continued

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| MAY<br>01... | 1120 | 3230                                            | 15.0                                 | 0.01                                                            | 0.01                                                         | 0.02                      | <0.01                      | <0.01                      | <0.01                      |
| JUN<br>02... | 1030 | 2710                                            | 14.5                                 | 0.01                                                            | <0.01                                                        | 0.02                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>07... | 0830 | 793                                             | 19.5                                 | 0.05                                                            | 0.01                                                         | 0.08                      | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>20... | 1100 | 1080                                            | 19.0                                 | 0.02                                                            | 0.02                                                         | 0.03                      | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>30... | 1300 | 1780                                            | 14.5                                 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.004 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.008 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.016 MM |
|--------------|------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| JUN<br>02... | 1030 | 74                                                           | 79                                                           | 85                                                           |

## YELLOWSTONE RIVER BASIN

06280000 NORTH FORK SHOSHONE RIVER NEAR WAPITI, WY

LOCATION.--Lat 44°28'40", long 109°20'30", in SW1/4 NE1/4 SE1/4 sec.15, T.52 N., R.104 W., Park County, Hydrologic Unit 10080012, on right bank 300 ft downstream from Trout Creek, 1.7 mi upstream from normal high-water line of Buffalo Bill Reservoir at elevation 5,369 ft, 4.7 mi east of Wapiti, and 14 mi west of Cody.

DRAINAGE AREA.--775 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1921 to September 1926, May 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,400 ft above National Geodetic Vertical Datum of 1929, from topographic map. January 1921 to September 1926, water-stage recorder at site 0.7 mi downstream at different datum. May 1979 to November 1984, water-stage recorder at site 300 ft downstream at datum 4.00 ft lower.

REMARKS.--Estimated daily discharges: Nov. 10-21 and Dec. 10 to Mar. 8. Records fair except those for estimated daily discharges, which are poor. Diversion for irrigation of about 2,700 acres upstream from station.

AVERAGE DISCHARGE.--13 years (water years 1922-26, 1980-87), 865 ft<sup>3</sup>/s, 626,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft<sup>3</sup>/s, June 9, 1981, gage height, 12.0 ft, from floodmarks, site and datum then in use; minimum daily, 94 ft<sup>3</sup>/s, Jan. 28, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                       | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------------------------------------------|------|-----------------------------------|---------------------|
| Dec. 13 | 0230 | ice jam                           | *5.63               | No other peak greater than base discharge. |      |                                   |                     |
| June 8  | 0130 | *7,740                            | 5.03                |                                            |      |                                   |                     |

Minimum daily discharge, 140 ft<sup>3</sup>/s, Jan. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY    | JUN    | JUL   | AUG    | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|--------|--------|-------|--------|-------|
| 1           | 425   | 332    | 296   | 170   | 200   | 150   | 282   | 1730   | 2010   | 947   | 507    | 275   |
| 2           | 433   | 311    | 304   | 180   | 200   | 150   | 267   | 1580   | 1870   | 864   | 488    | 274   |
| 3           | 425   | 326    | 278   | 180   | 190   | 160   | 306   | 1270   | 1820   | 786   | 472    | 268   |
| 4           | 431   | 321    | 266   | 200   | 190   | 170   | 403   | 1200   | 1820   | 745   | 438    | 281   |
| 5           | 420   | 318    | 313   | 200   | 180   | 180   | 499   | 1300   | 1960   | 703   | 417    | 310   |
| 6           | 467   | 328    | 360   | 200   | 180   | 190   | 573   | 1460   | 2070   | 686   | 424    | 271   |
| 7           | 495   | 307    | 343   | 190   | 190   | 190   | 520   | 1610   | 2960   | 649   | 426    | 261   |
| 8           | 458   | 297    | 320   | 180   | 200   | 190   | 507   | 1730   | 4090   | 618   | 427    | 256   |
| 9           | 433   | 324    | 310   | 170   | 210   | 187   | 450   | 1870   | 4070   | 597   | 393    | 249   |
| 10          | 422   | 290    | 280   | 170   | 210   | 177   | 402   | 1840   | 2970   | 623   | 382    | 247   |
| 11          | 401   | 260    | 210   | 190   | 200   | 174   | 462   | 1850   | 2690   | 1070  | 371    | 243   |
| 12          | 375   | 250    | 200   | 210   | 200   | 176   | 439   | 1860   | 2410   | 832   | 348    | 236   |
| 13          | 406   | 220    | 200   | 210   | 200   | 180   | 418   | 1980   | 2190   | 648   | 343    | 236   |
| 14          | 400   | 240    | 210   | 200   | 200   | 191   | 470   | 2020   | 2030   | 613   | 346    | 235   |
| 15          | 386   | 280    | 200   | 200   | 190   | 185   | 608   | 2060   | 1890   | 597   | 342    | 226   |
| 16          | 379   | 290    | 190   | 210   | 180   | 190   | 794   | 1930   | 1750   | 581   | 350    | 216   |
| 17          | 371   | 308    | 170   | 140   | 190   | 191   | 994   | 2070   | 1590   | 673   | 334    | 216   |
| 18          | 368   | 320    | 160   | 160   | 170   | 204   | 1090  | 2090   | 1450   | 928   | 309    | 215   |
| 19          | 369   | 330    | 170   | 180   | 180   | 200   | 979   | 1970   | 1400   | 756   | 305    | 212   |
| 20          | 361   | 350    | 185   | 200   | 160   | 197   | 721   | 1800   | 1330   | 614   | 298    | 208   |
| 21          | 366   | 350    | 180   | 210   | 150   | 203   | 735   | 1680   | 1290   | 670   | 294    | 201   |
| 22          | 363   | 351    | 190   | 210   | 160   | 202   | 950   | 1650   | 1240   | 1100  | 294    | 201   |
| 23          | 352   | 356    | 200   | 190   | 160   | 198   | 1200  | 1530   | 1130   | 706   | 292    | 204   |
| 24          | 346   | 339    | 200   | 200   | 160   | 207   | 1280  | 1430   | 1050   | 634   | 315    | 202   |
| 25          | 345   | 331    | 190   | 200   | 150   | 210   | 1360  | 1460   | 1040   | 600   | 329    | 199   |
| 26          | 335   | 307    | 180   | 207   | 160   | 217   | 1470  | 1510   | 1030   | 566   | 419    | 195   |
| 27          | 335   | 346    | 180   | 210   | 150   | 221   | 1550  | 1620   | 990    | 572   | 331    | 187   |
| 28          | 335   | 333    | 170   | 210   | 150   | 217   | 1670  | 1750   | 966    | 583   | 302    | 185   |
| 29          | 330   | 317    | 160   | 200   | ---   | 199   | 1770  | 1840   | 902    | 682   | 288    | 182   |
| 30          | 342   | 312    | 180   | 190   | ---   | 231   | 1790  | 1910   | 933    | 743   | 285    | 180   |
| 31          | 347   | ---    | 180   | 200   | ---   | 264   | ---   | 1940   | ---    | 560   | 281    | ---   |
| TOTAL       | 12021 | 9344   | 6975  | 5967  | 5060  | 6001  | 24959 | 53540  | 54941  | 21946 | 11150  | 6871  |
| MEAN        | 388   | 311    | 225   | 192   | 181   | 194   | 832   | 1727   | 1831   | 708   | 360    | 229   |
| MAX         | 495   | 356    | 360   | 210   | 210   | 264   | 1790  | 2090   | 4090   | 1100  | 507    | 310   |
| MIN         | 330   | 220    | 160   | 140   | 150   | 150   | 267   | 1200   | 902    | 560   | 281    | 180   |
| AC-FT       | 23840 | 18530  | 13830 | 11840 | 10040 | 11900 | 49510 | 106200 | 109000 | 43530 | 22120  | 13630 |
| CAL YR 1986 | TOTAL | 401769 |       | MEAN  | 1101  | MAX   | 9450  | MIN    | 160    | AC-FT | 796900 |       |
| WTR YR 1987 | TOTAL | 218775 |       | MEAN  | 599   | MAX   | 4090  | MIN    | 140    | AC-FT | 433900 |       |

06280000 NORTH FORK SHOSHONE RIVER NEAR WAPITI, WY--Continued

## WATER-QUALITY DATA

PERIOD OF RECORD.--May 1979 to September 1987 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: May 1979 to September 1987 (discontinued).

INSTRUMENTATION.--Water-temperature recorder since May 1979.

REMARKS.--Water-temperature recorder clock stopped Apr. 2-28 (range in temperature, no minimums recorded to 10.5°C), May 13-25 (range in temperature, 8.0°C to 16.0°C), Sept. 11-22 (range in temperature, 10.5°C to 16.0°C); no minimums recorded Mar. 6 to Apr. 1, Apr. 29 to May 2, and June 27-30; no maximums recorded Mar. 6, 8, 9, 13, 15, 16, 18-30, Apr. 1, June 27, 28, 30.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 20.0°C, Aug. 16, 1981; minimum, 0.0°C many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 19.5°C, July 30, minimum, 0.0°C many days in December, January, and February.

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY   | MAX     | MIN | MAX      | MIN | MAX      | MIN | MAX     | MIN | MAX      | MIN | MAX   | MIN |
|-------|---------|-----|----------|-----|----------|-----|---------|-----|----------|-----|-------|-----|
|       | OCTOBER |     | NOVEMBER |     | DECEMBER |     | JANUARY |     | FEBRUARY |     | MARCH |     |
| 1     | 7.5     | 6.0 | 4.5      | 2.0 | .5       | .5  | .0      | .0  | .0       | .0  | 2.0   | 1.5 |
| 2     | 7.5     | 6.0 | 3.5      | .5  | .5       | .5  | .0      | .0  | .0       | .0  | 3.5   | 2.0 |
| 3     | 8.5     | 5.5 | 3.5      | 2.5 | .5       | .5  | .0      | .0  | .0       | .0  | 5.0   | 3.5 |
| 4     | 9.0     | 5.5 | 4.5      | 1.5 | .0       | .0  | .0      | .0  | .0       | .0  | 4.0   | 4.0 |
| 5     | 10.5    | 7.0 | 4.5      | 2.5 | .0       | .0  | .0      | .0  | .0       | .0  | 5.0   | 4.0 |
| 6     | 10.5    | 7.0 | 4.0      | .5  | .0       | .0  | .0      | .0  | .0       | .0  | 5.0   | 5.0 |
| 7     | 10.5    | 7.5 | 1.0      | .5  | .0       | .0  | .0      | .0  | .0       | .0  | 5.0   | 5.0 |
| 8     | 9.5     | 7.5 | .5       | .5  | .0       | .0  | .0      | .0  | .0       | .0  | 5.0   | 5.0 |
| 9     | 9.5     | 6.0 | .5       | .5  | .0       | .0  | .0      | .0  | .0       | .0  | 5.0   | 5.0 |
| 10    | 8.5     | 3.5 | .5       | .5  | .0       | .0  | .0      | .0  | .0       | .0  | 6.0   | --- |
| 11    | 5.0     | 2.0 | .5       | .5  | .0       | .0  | .0      | .0  | .0       | .0  | 6.0   | --- |
| 12    | 4.5     | 2.0 | .5       | .5  | .0       | .0  | .0      | .0  | .0       | .0  | 6.5   | --- |
| 13    | 5.5     | 1.5 | .5       | .5  | .0       | .0  | .0      | .0  | .0       | .0  | ---   | --- |
| 14    | 6.0     | 3.5 | .5       | .5  | .0       | .0  | .0      | .0  | .5       | .0  | 6.5   | --- |
| 15    | 6.5     | 3.0 | .5       | .5  | .0       | .0  | .0      | .0  | 1.0      | .5  | ---   | --- |
| 16    | 6.5     | 3.5 | .5       | .5  | .0       | .0  | .0      | .0  | 1.0      | 1.0 | ---   | --- |
| 17    | 6.0     | 3.0 | .5       | .5  | .0       | .0  | .0      | .0  | 1.5      | 1.0 | 7.0   | --- |
| 18    | 5.5     | 4.0 | 1.0      | .5  | .0       | .0  | .0      | .0  | 1.5      | 1.5 | ---   | --- |
| 19    | 6.0     | 4.0 | 1.5      | .5  | .0       | .0  | .0      | .0  | 2.0      | 1.5 | ---   | --- |
| 20    | 6.0     | 5.0 | 2.0      | .5  | .0       | .0  | .0      | .0  | 1.5      | 1.5 | ---   | --- |
| 21    | 6.5     | 5.0 | 1.5      | 1.0 | .0       | .0  | .0      | .0  | 2.0      | 1.5 | ---   | --- |
| 22    | 8.0     | 5.5 | 1.0      | .5  | .0       | .0  | .0      | .0  | 1.5      | 1.5 | ---   | --- |
| 23    | 7.0     | 4.0 | .5       | .5  | .0       | .0  | .0      | .0  | 1.5      | 1.5 | ---   | --- |
| 24    | 7.0     | 4.5 | 2.0      | .5  | .0       | .0  | .0      | .0  | 1.5      | 1.5 | ---   | --- |
| 25    | 7.5     | 4.0 | 1.0      | .5  | .0       | .0  | .0      | .0  | 1.5      | 1.5 | ---   | --- |
| 26    | 7.5     | 4.5 | .5       | .5  | .0       | .0  | .0      | .0  | 1.5      | 1.5 | ---   | --- |
| 27    | 8.0     | 5.5 | 1.0      | .5  | .0       | .0  | .0      | .0  | 1.5      | 1.5 | ---   | --- |
| 28    | 7.0     | 5.0 | 1.5      | .5  | .0       | .0  | .0      | .0  | 1.5      | 1.5 | ---   | --- |
| 29    | 5.5     | 3.5 | 1.5      | .5  | .0       | .0  | .0      | .0  | ---      | --- | ---   | --- |
| 30    | 5.0     | 4.0 | 1.0      | .5  | .0       | .0  | .0      | .0  | ---      | --- | ---   | --- |
| 31    | 4.0     | 2.5 | ---      | --- | .0       | .0  | .0      | .0  | ---      | --- | 8.5   | --- |
| MONTH | 10.5    | 1.5 | 4.5      | .5  | .5       | .0  | .0      | .0  | 2.0      | .0  | 8.5   | 1.5 |



TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

## 06280300 SOUTH FORK SHOSHONE RIVER NEAR VALLEY, WY

LOCATION.--Lat 44°12'30", long 109°33'15", in NE1/4 sec.24, T.49 N., R.106 W., Park County, Hydrologic Unit 10080013, Shoshone National Forest, on left bank 75 ft downstream from U.S. Forest Service bridge, 0.4 mi downstream from Boulder Creek, 3.2 mi northeast of Valley, and 34 mi southwest of Cody.

DRAINAGE AREA.--297 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1956 to September 1958, October 1959 to current year.

REVISED RECORDS.--WRD WY 1974: 1963.

GAGE.--Water-stage recorder. Elevation of gage is 6,200 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 22, 1961, at site 75 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 10-25 and Jan. 14-16. Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 450 acres upstream from station.

AVERAGE DISCHARGE.--30 years, 424 ft<sup>3</sup>/s, 307,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,000 ft<sup>3</sup>/s, June 9, 1981, gage height, 9.24 ft, from floodmarks; minimum daily, 41 ft<sup>3</sup>/s, Feb. 27, 28, 1961, Mar. 29, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| June 9 | 0100 | *3,430                         | *7.08            | No other peak greater than base discharge. |      |                                |                  |

Minimum daily discharge, 63 ft<sup>3</sup>/s, Mar. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL    | AUG   | SEP  |
|-------------|-------|--------|------|------|------|------|-------|-------|-------|--------|-------|------|
| 1           | 191   | 152    | 106  | 80   | 81   | 77   | 78    | 841   | 694   | 685    | 379   | 168  |
| 2           | 205   | 136    | 110  | 93   | 82   | 78   | 73    | 618   | 570   | 577    | 346   | 165  |
| 3           | 200   | 145    | 105  | 90   | 80   | 82   | 79    | 429   | 526   | 506    | 319   | 167  |
| 4           | 202   | 146    | 92   | 95   | 78   | 87   | 101   | 421   | 619   | 482    | 296   | 180  |
| 5           | 201   | 147    | 113  | 94   | 72   | 95   | 129   | 530   | 829   | 435    | 282   | 172  |
| 6           | 229   | 150    | 125  | 94   | 75   | 104  | 143   | 651   | 923   | 437    | 270   | 161  |
| 7           | 241   | 135    | 117  | 83   | 82   | 103  | 142   | 780   | 1270  | 405    | 274   | 156  |
| 8           | 217   | 120    | 103  | 76   | 81   | 100  | 134   | 918   | 1860  | 369    | 264   | 153  |
| 9           | 202   | 118    | 91   | 73   | 86   | 91   | 110   | 953   | 2020  | 414    | 245   | 149  |
| 10          | 196   | 93     | 86   | 77   | 87   | 87   | 99    | 940   | 1400  | 529    | 242   | 147  |
| 11          | 182   | 75     | 83   | 89   | 84   | 80   | 110   | 960   | 1410  | 621    | 244   | 145  |
| 12          | 165   | 64     | 85   | 94   | 81   | 77   | 106   | 971   | 1440  | 485    | 224   | 144  |
| 13          | 179   | 67     | 88   | 90   | 84   | 78   | 98    | 1070  | 1450  | 384    | 217   | 139  |
| 14          | 182   | 74     | 98   | 85   | 82   | 77   | 108   | 1110  | 1400  | 347    | 229   | 139  |
| 15          | 181   | 90     | 105  | 80   | 77   | 76   | 148   | 1190  | 1370  | 345    | 230   | 137  |
| 16          | 177   | 92     | 101  | 70   | 75   | 77   | 214   | 1080  | 1270  | 349    | 228   | 138  |
| 17          | 178   | 92     | 86   | 68   | 78   | 77   | 300   | 1200  | 1070  | 740    | 203   | 138  |
| 18          | 174   | 94     | 78   | 74   | 68   | 79   | 356   | 1170  | 924   | 1170   | 192   | 136  |
| 19          | 174   | 96     | 87   | 80   | 78   | 76   | 278   | 1020  | 843   | 778    | 185   | 135  |
| 20          | 175   | 94     | 97   | 91   | 70   | 72   | 186   | 900   | 756   | 620    | 178   | 134  |
| 21          | 181   | 96     | 91   | 91   | 64   | 72   | 205   | 748   | 786   | 684    | 176   | 132  |
| 22          | 176   | 96     | 97   | 92   | 68   | 72   | 323   | 643   | 725   | 870    | 177   | 131  |
| 23          | 174   | 94     | 106  | 79   | 73   | 71   | 470   | 574   | 568   | 639    | 187   | 127  |
| 24          | 169   | 98     | 103  | 82   | 69   | 71   | 514   | 555   | 547   | 568    | 246   | 127  |
| 25          | 166   | 100    | 96   | 83   | 68   | 69   | 569   | 558   | 569   | 515    | 293   | 126  |
| 26          | 165   | 107    | 90   | 84   | 72   | 69   | 640   | 620   | 575   | 469    | 233   | 125  |
| 27          | 162   | 117    | 92   | 86   | 67   | 71   | 739   | 614   | 567   | 506    | 207   | 123  |
| 28          | 161   | 121    | 86   | 85   | 75   | 69   | 837   | 630   | 577   | 571    | 190   | 123  |
| 29          | 156   | 121    | 84   | 82   | ---  | 67   | 875   | 670   | 558   | 487    | 183   | 123  |
| 30          | 165   | 119    | 93   | 74   | ---  | 63   | 876   | 662   | 736   | 454    | 180   | 120  |
| 31          | 158   | ---    | 87   | 83   | ---  | 76   | ---   | 707   | ---   | 414    | 174   | ---  |
| TOTAL       | 5684  | 3249   | 2981 | 2597 | 2137 | 2443 | 9040  | 24733 | 28852 | 16855  | 7293  | 4260 |
| MEAN        | 183   | 108    | 96.2 | 83.8 | 76.3 | 78.8 | 301   | 798   | 962   | 544    | 235   | 142  |
| MAX         | 241   | 152    | 125  | 95   | 87   | 104  | 876   | 1200  | 2020  | 1170   | 379   | 180  |
| MIN         | 156   | 64     | 78   | 68   | 64   | 63   | 73    | 421   | 526   | 345    | 174   | 120  |
| AC-FT       | 11270 | 6440   | 5910 | 5150 | 4240 | 4850 | 17930 | 49060 | 57230 | 33430  | 14470 | 8450 |
| CAL YR 1986 | TOTAL | 195698 | MEAN | 536  | MAX  | 3730 | MIN   | 60    | AC-FT | 388200 |       |      |
| WTR YR 1987 | TOTAL | 110124 | MEAN | 302  | MAX  | 2020 | MIN   | 63    | AC-FT | 218400 |       |      |

## 06281000 SOUTH FORK SHOSHONE RIVER ABOVE BUFFALO BILL RESERVOIR, WY

LOCATION.--Lat 44°25'58", long 109°15'06", in lot 46, sec.33, T.52 N., R.103 W., Park County, Hydrologic Unit 10080013, on left bank at bridge on county road, 1.0 mi upstream from normal high-water line of Buffalo Bill Reservoir at elevation 5,369 ft, 1.1 mi downstream from Cody Canal diversion, and 11.5 mi southwest of Cody.

DRAINAGE AREA.--585 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to November 1903, May 1905 to September 1908, January 1921 to September 1926, October 1973 to current year (gage heights only June to September 1908). No winter records 1906, 1908, 1922. Published as "at Marquette" 1903, 1905-8, and as Shoshone River above Shoshone Reservoir 1921-26.

REVISED RECORDS.--WSP 1309: 1907.

GAGE.--Water-stage recorder. Elevation of gage is 5,410 ft above National Geodetic Vertical Datum of 1929, from topographic map. Apr. 26 to Nov. 30, 1903, and May 1905 to May 30, 1908, nonrecording gages at sites within about 6.0 mi downstream at different datums.

REMARKS.--Estimated daily discharges: Nov. 11 to Feb. 8, Feb. 20-22, Feb. 27 to Mar. 1, Aug. 10-12, and Sept. 29-30. Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 11,000 acres upstream from station. U.S. Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--19 years (water years 1907, 1923-26, 1974-87), 406 ft<sup>3</sup>/s, 294,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,960 ft<sup>3</sup>/s, June 9, 1981, gage height, 9.41 ft; minimum daily, 1.8 ft<sup>3</sup>/s, Sept. 23, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,680 ft<sup>3</sup>/s, July 29, gage height, 6.35 ft; maximum gage height, 7.95 ft, Jan. 22 (backwater from ice); minimum daily discharge, 1.8 ft<sup>3</sup>/s, Sept. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL   | AUG    | SEP   |
|-------------|-------|---------|------|------|------|------|-------|-------|-------|-------|--------|-------|
| 1           | 102   | 136     | 125  | 90   | 98   | 93   | 120   | 644   | 599   | 427   | 149    | 13    |
| 2           | 119   | 123     | 125  | 98   | 98   | 96   | 109   | 426   | 487   | 337   | 118    | 11    |
| 3           | 118   | 125     | 120  | 95   | 96   | 95   | 114   | 191   | 414   | 288   | 97     | 8.8   |
| 4           | 119   | 124     | 110  | 98   | 92   | 98   | 133   | 121   | 424   | 236   | 72     | 16    |
| 5           | 111   | 126     | 115  | 98   | 92   | 108  | 165   | 178   | 585   | 194   | 54     | 22    |
| 6           | 129   | 164     | 120  | 100  | 109  | 122  | 200   | 285   | 701   | 174   | 32     | 10    |
| 7           | 137   | 172     | 120  | 97   | 108  | 135  | 207   | 405   | 1160  | 131   | 22     | 6.6   |
| 8           | 121   | 159     | 120  | 90   | 120  | 132  | 204   | 567   | 2160  | 62    | 24     | 6.3   |
| 9           | 114   | 152     | 110  | 88   | 124  | 119  | 176   | 660   | 2390  | 62    | 19     | 6.8   |
| 10          | 109   | 149     | 100  | 94   | 118  | 111  | 152   | 662   | 1360  | 139   | 18     | 7.0   |
| 11          | 101   | 140     | 96   | 104  | 115  | 108  | 153   | 681   | 1290  | 358   | 8.9    | 4.8   |
| 12          | 83    | 115     | 98   | 110  | 111  | 109  | 173   | 656   | 1270  | 275   | 7.9    | 5.7   |
| 13          | 97    | 119     | 100  | 108  | 110  | 109  | 163   | 796   | 1250  | 163   | 7.4    | 4.6   |
| 14          | 112   | 124     | 105  | 100  | 111  | 108  | 143   | 799   | 1160  | 100   | 7.7    | 4.4   |
| 15          | 148   | 130     | 110  | 95   | 106  | 106  | 147   | 932   | 1020  | 66    | 8.7    | 3.7   |
| 16          | 164   | 130     | 105  | 90   | 102  | 105  | 214   | 817   | 1000  | 43    | 14     | 2.5   |
| 17          | 161   | 130     | 100  | 90   | 100  | 105  | 276   | 1010  | 785   | 174   | 8.9    | 2.3   |
| 18          | 158   | 130     | 93   | 94   | 99   | 107  | 358   | 895   | 628   | 762   | 7.8    | 2.1   |
| 19          | 156   | 130     | 96   | 100  | 99   | 104  | 326   | 783   | 563   | 474   | 7.5    | 2.8   |
| 20          | 160   | 130     | 100  | 105  | 98   | 103  | 161   | 627   | 462   | 278   | 7.3    | 2.5   |
| 21          | 167   | 130     | 98   | 105  | 90   | 104  | 150   | 536   | 490   | 238   | 7.6    | 3.3   |
| 22          | 163   | 130     | 100  | 105  | 98   | 108  | 200   | 434   | 480   | 545   | 7.5    | 2.5   |
| 23          | 156   | 129     | 108  | 95   | 99   | 106  | 330   | 352   | 348   | 320   | 35     | 1.8   |
| 24          | 155   | 130     | 106  | 99   | 102  | 107  | 409   | 303   | 280   | 238   | 42     | 2.3   |
| 25          | 148   | 125     | 104  | 100  | 97   | 106  | 433   | 319   | 284   | 194   | 94     | 3.5   |
| 26          | 143   | 128     | 100  | 102  | 93   | 101  | 506   | 371   | 285   | 162   | 107    | 2.1   |
| 27          | 141   | 130     | 100  | 105  | 90   | 106  | 546   | 439   | 274   | 142   | 62     | 2.6   |
| 28          | 141   | 130     | 96   | 105  | 88   | 106  | 548   | 439   | 270   | 254   | 38     | 3.6   |
| 29          | 138   | 130     | 93   | 100  | ---  | 100  | 658   | 519   | 261   | 546   | 24     | 5.9   |
| 30          | 141   | 130     | 96   | 94   | ---  | 105  | 706   | 532   | 362   | 412   | 17     | 3.8   |
| 31          | 147   | ---     | 95   | 100  | ---  | 106  | ---   | 562   | ---   | 218   | 14     | ---   |
| TOTAL       | 4159  | 4000    | 3264 | 3054 | 2863 | 3328 | 8180  | 16941 | 23042 | 8012  | 1139.2 | 174.3 |
| MEAN        | 134   | 133     | 105  | 98.5 | 102  | 107  | 273   | 546   | 768   | 258   | 36.7   | 5.81  |
| MAX         | 167   | 172     | 125  | 110  | 124  | 135  | 706   | 1010  | 2390  | 762   | 149    | 22    |
| MIN         | 83    | 115     | 93   | 88   | 88   | 93   | 109   | 121   | 261   | 43    | 7.3    | 1.8   |
| AC-FT       | 8250  | 7930    | 6470 | 6060 | 5680 | 6600 | 16230 | 33600 | 45700 | 15890 | 2260   | 346   |
| CAL YR 1986 | TOTAL | 171612  |      | MEAN | 470  | MAX  | 4420  | MIN   | 27    | AC-FT | 340400 |       |
| WTR YR 1987 | TOTAL | 78156.5 |      | MEAN | 214  | MAX  | 2390  | MIN   | 1.8   | AC-FT | 155000 |       |

06281000 SOUTH FORK SHOSHONE RIVER ABOVE BUFFALO BILL RESERVOIR, WY--Continued

## WATER-QUALITY DATA

PERIOD OF RECORD.--October 1981 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1981 to current year.

INSTRUMENTATION.--Water-temperature recorder since October 1981.

REMARKS.--Water-temperature recorder clock stopped Mar. 7-10 (range in temperature, 1.5°C to 8.0°C), Apr. 26-28 (range in temperature, 7.0°C to 13.0°C); no record Oct. 1 to Nov. 12, and Aug. 16 to Sept. 22.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 25.0°C, July 16, 1985; minimum, 0.0°C on many days each year.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 23.0°C, Aug. 8; minimum, 0.0°C on several days during November, December, January, and February.

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY   | MAX     | MIN | MAX      | MIN | MAX      | MIN | MAX     | MIN | MAX      | MIN | MAX   | MIN |
|-------|---------|-----|----------|-----|----------|-----|---------|-----|----------|-----|-------|-----|
|       | OCTOBER |     | NOVEMBER |     | DECEMBER |     | JANUARY |     | FEBRUARY |     | MARCH |     |
| 1     |         |     | ---      | --- | .0       | .0  | .0      | .0  | .0       | .0  | 1.0   | .5  |
| 2     |         |     | ---      | --- | .0       | .0  | .0      | .0  | .0       | .0  | 4.5   | .5  |
| 3     |         |     | ---      | --- | .0       | .0  | .0      | .0  | .0       | .0  | 7.0   | 1.5 |
| 4     |         |     | ---      | --- | .0       | .0  | .0      | .0  | 1.0      | .0  | 5.5   | 3.0 |
| 5     |         |     | ---      | --- | .0       | .0  | .0      | .0  | .5       | .5  | 7.5   | 3.0 |
| 6     |         |     | ---      | --- | .0       | .0  | .0      | .0  | 1.0      | .0  | 7.5   | 4.0 |
| 7     |         |     | ---      | --- | .0       | .0  | .0      | .0  | .5       | .0  | ---   | --- |
| 8     |         |     | ---      | --- | .0       | .0  | .0      | .0  | 3.0      | .0  | ---   | --- |
| 9     |         |     | ---      | --- | .0       | .0  | .0      | .0  | 4.0      | 2.0 | ---   | --- |
| 10    |         |     | ---      | --- | .0       | .0  | .0      | .0  | 3.5      | 2.0 | ---   | --- |
| 11    |         |     | ---      | --- | .0       | .0  | .0      | .0  | 5.0      | 2.0 | 7.5   | 3.5 |
| 12    |         |     | ---      | --- | .0       | .0  | .0      | .0  | 4.5      | 1.5 | 7.5   | 3.0 |
| 13    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 3.5      | 1.5 | 8.5   | 4.0 |
| 14    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 3.5      | 2.0 | 9.0   | 4.0 |
| 15    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 3.0      | .5  | 6.5   | 4.0 |
| 16    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 2.5      | .5  | 5.5   | 3.5 |
| 17    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 4.0      | .5  | 8.0   | 2.0 |
| 18    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 3.0      | .5  | 7.0   | 3.5 |
| 19    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 3.0      | .5  | 7.5   | 2.5 |
| 20    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 2.0      | .5  | 5.5   | 2.5 |
| 21    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 1.5      | .5  | 5.0   | 1.5 |
| 22    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 1.0      | .5  | 6.0   | 1.0 |
| 23    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 1.0      | .5  | 6.5   | 1.0 |
| 24    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 1.5      | 1.0 | 5.0   | 2.0 |
| 25    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 2.0      | .5  | 8.0   | 1.5 |
| 26    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 2.5      | .5  | 6.5   | 2.5 |
| 27    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 3.0      | .5  | 6.5   | 1.0 |
| 28    |         |     | .0       | .0  | .0       | .0  | .0      | .0  | 1.0      | .5  | 3.5   | 1.0 |
| 29    |         |     | .0       | .0  | .0       | .0  | 1.0     | .0  | ---      | --- | 3.0   | .5  |
| 30    |         |     | .0       | .0  | .0       | .0  | 1.5     | .0  | ---      | --- | 7.0   | .5  |
| 31    |         |     | ---      | --- | .0       | .0  | .5      | .0  | ---      | --- | 10.5  | 3.0 |
| MONTH |         |     | .0       | .0  | .0       | .0  | 1.5     | .0  | 5.0      | .0  | 10.5  | .5  |

06281000 SOUTH FORK SHOSHONE RIVER ABOVE BUFFALO BILL RESERVOIR, WY--Continued

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]



## 06281400 DIAMOND CREEK NEAR MOUTH, NEAR CODY, WY

LOCATION.--Lat 44°27'21", long 109°08'17", in SE1/4 NE1/4 NE1/4 sec.29, T.52 N., R.102 W., Park County, Hydrologic Unit 10080013, on left bank 40 ft downstream from Cody Canal crossing, 0.8 mi upstream from bridge on State Highway 291, 3.9 mi southeast of Buffalo Bill Dam, and 6.3 mi southwest of Cody.

DRAINAGE AREA.--7.34 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder and wooden control. Elevation of gage is 5,420 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 25, 1985, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Oct. 1, 2, Nov. 6 to Mar. 10, June 12 to July 7, and Aug. 8 to Sept. 30. Records good except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--6 years (water years 1982-87), 6.34 ft<sup>3</sup>/s, 4,590 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43 ft<sup>3</sup>/s, July 8, 1986, gage height, 1.59 ft; maximum gage height, 1.65 ft, June 25, 1985; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40 ft<sup>3</sup>/s, June 9, gage height, 1.57 ft; minimum daily, 0.24 ft<sup>3</sup>/s, Dec. 17-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN   | FEB   | MAR   | APR    | MAY   | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|---------|------|-------|-------|-------|--------|-------|------|-------|-------|-------|
| 1           | 3.6   | 2.6     | .45  | .26   | .72   | .50   | .98    | 8.0   | 22   | 17    | 19    | 6.8   |
| 2           | 3.0   | 2.6     | .45  | .27   | .72   | .52   | .93    | 7.2   | 23   | 16    | 18    | 6.4   |
| 3           | 2.8   | 2.6     | .45  | .29   | .74   | .54   | 1.1    | 7.7   | 22   | 15    | 18    | 6.4   |
| 4           | 3.8   | 2.6     | .45  | .30   | .66   | .54   | 1.0    | 7.2   | 19   | 15    | 17    | 6.4   |
| 5           | 4.5   | 2.6     | .45  | .30   | .64   | .54   | 1.1    | 5.7   | 19   | 16    | 17    | 6.0   |
| 6           | 4.5   | 2.4     | .43  | .28   | .70   | .56   | 1.1    | 6.0   | 22   | 17    | 19    | 5.6   |
| 7           | 4.5   | 2.2     | .43  | .27   | .74   | .58   | 1.1    | 4.9   | 23   | 23    | 17    | 5.2   |
| 8           | 4.3   | 2.0     | .40  | .26   | .74   | .58   | 1.1    | 7.2   | 27   | 27    | 15    | 5.4   |
| 9           | 4.9   | 1.7     | .38  | .25   | .76   | .60   | 1.1    | 7.5   | 31   | 27    | 12    | 5.6   |
| 10          | 5.9   | 1.5     | .35  | .27   | .80   | .66   | 1.0    | 4.5   | 23   | 28    | 10    | 5.6   |
| 11          | 5.9   | 1.3     | .33  | .28   | .80   | .45   | .99    | 6.1   | 19   | 29    | 9.2   | 5.4   |
| 12          | 5.2   | 1.1     | .32  | .29   | .80   | .54   | 1.2    | 7.7   | 16   | 22    | 8.4   | 5.2   |
| 13          | 4.9   | 1.0     | .30  | .30   | .76   | .64   | 1.3    | 6.5   | 15   | 21    | 9.0   | 5.0   |
| 14          | 4.8   | .94     | .27  | .31   | .74   | .59   | 1.2    | 4.7   | 15   | 20    | 13    | 5.0   |
| 15          | 4.8   | .90     | .25  | .30   | .70   | .61   | 1.1    | 6.2   | 15   | 17    | 12    | 5.0   |
| 16          | 4.8   | .84     | .25  | .28   | .66   | .67   | 1.1    | 9.1   | 14   | 16    | 10    | 5.2   |
| 17          | 5.0   | .70     | .24  | .27   | .66   | .75   | 1.0    | 9.8   | 13   | 15    | 8.3   | 5.4   |
| 18          | 5.4   | .64     | .24  | .27   | .64   | .76   | 9.9    | 9.5   | 12   | 17    | 7.8   | 5.4   |
| 19          | 5.4   | .62     | .24  | .28   | .64   | .72   | 11     | 8.7   | 12   | 16    | 7.8   | 5.4   |
| 20          | 5.4   | .58     | .24  | .30   | .62   | .69   | 14     | 14    | 13   | 15    | 7.2   | 5.2   |
| 21          | 5.5   | .56     | .24  | .31   | .60   | .68   | 12     | 19    | 13   | 16    | 7.8   | 5.4   |
| 22          | 4.9   | .56     | .24  | .32   | .60   | .73   | 12     | 10    | 13   | 18    | 7.8   | 5.6   |
| 23          | 4.0   | .56     | .26  | .36   | .56   | .82   | 9.6    | 7.6   | 12   | 18    | 8.0   | 5.6   |
| 24          | 4.2   | .54     | .26  | .43   | .54   | .93   | 10     | 11    | 12   | 23    | 8.8   | 5.4   |
| 25          | 4.6   | .52     | .26  | .54   | .50   | .94   | 11     | 11    | 12   | 21    | 9.0   | 5.2   |
| 26          | 4.7   | .50     | .27  | .62   | .50   | .99   | 7.4    | 13    | 12   | 19    | 8.5   | 5.4   |
| 27          | 4.8   | .50     | .28  | .64   | .50   | .96   | 14     | 23    | 14   | 17    | 8.0   | 5.4   |
| 28          | 4.1   | .50     | .29  | .66   | .48   | .74   | 18     | 19    | 14   | 19    | 7.8   | 5.6   |
| 29          | 3.2   | .48     | .28  | .68   | ---   | .94   | 13     | 19    | 14   | 24    | 7.6   | 5.6   |
| 30          | 2.8   | .45     | .27  | .70   | ---   | 1.1   | 7.7    | 17    | 15   | 19    | 7.0   | 5.8   |
| 31          | 2.7   | ---     | .26  | .70   | ---   | 1.3   | ---    | 20    | ---  | 17    | 7.0   | ---   |
| TOTAL       | 138.9 | 36.59   | 9.83 | 11.59 | 18.52 | 22.17 | 168.00 | 317.8 | 506  | 600   | 342.0 | 166.6 |
| MEAN        | 4.48  | 1.22    | .32  | .37   | .66   | .72   | 5.60   | 10.3  | 16.9 | 19.4  | 11.0  | 5.55  |
| MAX         | 5.9   | 2.6     | .45  | .70   | .80   | 1.3   | 18     | 23    | 31   | 29    | 19    | 6.8   |
| MIN         | 2.7   | .45     | .24  | .25   | .48   | .45   | .93    | 4.5   | 12   | 15    | 7.0   | 5.0   |
| AC-FT       | 276   | 73      | 19   | 23    | 37    | 44    | 333    | 630   | 1000 | 1190  | 678   | 330   |
| CAL YR 1986 | TOTAL | 2240.13 |      | MEAN  | 6.14  | MAX   | 26     | MIN   | .24  | AC-FT | 4440  |       |
| WTR YR 1987 | TOTAL | 2338.00 |      | MEAN  | 6.41  | MAX   | 31     | MIN   | .24  | AC-FT | 4640  |       |

## 06282000 SHOSHONE RIVER BELOW BUFFALO BILL RESERVOIR, WY

LOCATION.--Lat 44°31'00", long 109°05'50", in lot 71, NE1/4 sec.3, T.52 N., R.102 W., Park County, Hydrologic Unit 10080014, on left bank 0.5 mi downstream from Trail Creek, 1.0 mi west of Cody city limits, and 5.5 mi downstream from Buffalo Bill Reservoir.

DRAINAGE AREA.--1,538 mi<sup>2</sup>. Area at site prior to Oct. 1, 1949, 1,502 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1921 to current year. Prior to October 1944, published as "below Shoshone Reservoir".

GAGE.--Water-stage recorder. Elevation of gage is 4,900 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1949, at site 2.5 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Buffalo Bill Reservoir. (See station 06281500.) Diversions upstream from station for irrigation of about 56,100 acres, of which about 37,900 acres are downstream from station. Diversion, 2.1 mi upstream, to Heart Mountain Canal began in 1943.

AVERAGE DISCHARGE.--21 years (water years 1922-42), prior to Heart Mountain diversion, 1,256 ft<sup>3</sup>/s, 909,300 acre-ft/yr; 45 years (water years 1943-87), 1,117 ft<sup>3</sup>/s, 809,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,300 ft<sup>3</sup>/s, June 9, 1981, gage height, 11.57 ft; minimum daily, 14 ft<sup>3</sup>/s, Nov. 19, 1933.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since construction of Buffalo Bill Reservoir in 1909, 18,700 ft<sup>3</sup>/s, June 15, 1918, by computation of flow over dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,910 ft<sup>3</sup>/s, June 11, gage height, 6.92 ft; minimum daily, 258 ft<sup>3</sup>/s, Mar. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN    | JUL   | AUG    | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 1           | 576   | 386    | 387   | 352   | 268   | 272   | 270   | 1420  | 381    | 1270  | 983    | 823   |
| 2           | 578   | 386    | 388   | 352   | 271   | 270   | 270   | 1430  | 382    | 1260  | 980    | 822   |
| 3           | 576   | 386    | 388   | 353   | 271   | 270   | 273   | 1420  | 474    | 1270  | 916    | 819   |
| 4           | 576   | 387    | 387   | 354   | 271   | 270   | 274   | 1420  | 596    | 1260  | 883    | 804   |
| 5           | 575   | 387    | 386   | 354   | 272   | 271   | 272   | 1430  | 699    | 1270  | 881    | 804   |
| 6           | 576   | 388    | 385   | 353   | 271   | 271   | 274   | 1420  | 990    | 1290  | 913    | 803   |
| 7           | 574   | 387    | 385   | 353   | 270   | 272   | 272   | 1420  | 1210   | 1290  | 943    | 805   |
| 8           | 576   | 386    | 386   | 359   | 270   | 271   | 274   | 1400  | 1830   | 1300  | 939    | 805   |
| 9           | 576   | 386    | 385   | 358   | 270   | 272   | 273   | 1390  | 3590   | 1290  | 941    | 805   |
| 10          | 577   | 385    | 386   | 358   | 270   | 274   | 293   | 1390  | 3600   | 1290  | 945    | 800   |
| 11          | 576   | 385    | 385   | 356   | 270   | 279   | 372   | 1380  | 3650   | 1280  | 944    | 801   |
| 12          | 576   | 385    | 384   | 354   | 270   | 278   | 373   | 1370  | 3620   | 1250  | 937    | 812   |
| 13          | 574   | 385    | 381   | 355   | 271   | 279   | 372   | 1270  | 3600   | 1150  | 939    | 825   |
| 14          | 576   | 385    | 381   | 354   | 271   | 279   | 381   | 1200  | 3620   | 1150  | 946    | 769   |
| 15          | 582   | 385    | 381   | 354   | 270   | 278   | 551   | 1220  | 3350   | 1150  | 942    | 716   |
| 16          | 588   | 385    | 352   | 354   | 270   | 279   | 684   | 1210  | 2640   | 1160  | 943    | 718   |
| 17          | 594   | 386    | 305   | 306   | 270   | 279   | 669   | 1230  | 1730   | 1160  | 932    | 708   |
| 18          | 497   | 385    | 346   | 298   | 270   | 279   | 752   | 1110  | 1310   | 1150  | 920    | 708   |
| 19          | 385   | 385    | 350   | 296   | 270   | 280   | 866   | 1010  | 1170   | 1150  | 883    | 706   |
| 20          | 385   | 385    | 351   | 294   | 272   | 279   | 864   | 922   | 1150   | 1110  | 888    | 706   |
| 21          | 385   | 386    | 350   | 294   | 271   | 280   | 867   | 822   | 1150   | 1070  | 908    | 706   |
| 22          | 385   | 385    | 350   | 295   | 271   | 279   | 920   | 725   | 1150   | 1080  | 968    | 711   |
| 23          | 385   | 384    | 350   | 295   | 270   | 279   | 1020  | 697   | 1140   | 1010  | 970    | 712   |
| 24          | 385   | 384    | 351   | 294   | 270   | 279   | 1140  | 699   | 1190   | 966   | 972    | 710   |
| 25          | 385   | 385    | 349   | 295   | 270   | 258   | 1330  | 698   | 1260   | 1010  | 970    | 712   |
| 26          | 386   | 385    | 349   | 295   | 270   | 283   | 1420  | 698   | 1240   | 1040  | 932    | 675   |
| 27          | 388   | 384    | 350   | 295   | 270   | 285   | 1420  | 521   | 1190   | 1040  | 904    | 665   |
| 28          | 386   | 385    | 350   | 275   | 270   | 286   | 1430  | 382   | 1170   | 1040  | 872    | 637   |
| 29          | 388   | 385    | 349   | 268   | ---   | 285   | 1430  | 383   | 1190   | 1040  | 867    | 599   |
| 30          | 388   | 385    | 348   | 269   | ---   | 259   | 1430  | 379   | 1240   | 1040  | 851    | 604   |
| 31          | 386   | ---    | 350   | 269   | ---   | 270   | ---   | 381   | ---    | 1020  | 822    | ---   |
| TOTAL       | 15340 | 11563  | 11325 | 10011 | 7570  | 8545  | 21036 | 32447 | 51512  | 35856 | 28634  | 22290 |
| MEAN        | 495   | 385    | 365   | 323   | 270   | 276   | 701   | 1047  | 1717   | 1157  | 924    | 743   |
| MAX         | 594   | 388    | 388   | 359   | 272   | 286   | 1430  | 1430  | 3650   | 1300  | 983    | 825   |
| MIN         | 385   | 384    | 305   | 268   | 268   | 258   | 270   | 379   | 381    | 966   | 822    | 599   |
| AC-FT       | 30430 | 22940  | 22460 | 19860 | 15020 | 16950 | 41720 | 64360 | 102200 | 71120 | 56800  | 44210 |
| CAL YR 1986 | TOTAL | 496854 |       | MEAN  | 1361  | MAX   | 8110  | MIN   | 231    | AC-FT | 985500 |       |
| WTR YR 1987 | TOTAL | 256129 |       | MEAN  | 702   | MAX   | 3650  | MIN   | 258    | AC-FT | 508000 |       |

## 06282900 SHOSHONE RIVER ABOVE DRY CREEK, NEAR CODY, WY

LOCATION.--Lat 44°34'37", long 108°58'18", in SE1/4 NW1/4 sec.13, T.53 N., R.101 W., Park County, Hydrologic Unit 10080014, at bridge on U.S. Highway 14A, 160 ft downstream from Dry Gulch, 480 ft upstream from Dry Creek, 0.4 mi south of Trotters Station, and 5.5 mi northeast of Cody.

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| NOV<br>12... | 1510 | 392                                             | 690                                               | 8.2                            | 10.0                                 | 646                                                  | 9.8                                 |
| JAN<br>26... | 1540 | 303                                             | 790                                               | 8.2                            | 8.0                                  | 638                                                  | 10.0                                |
| APR<br>22... | 1540 | 960                                             | 470                                               | 8.0                            | 13.0                                 | 640                                                  | 9.1                                 |
| JUL<br>07... | 1200 | 1330                                            | 435                                               | 8.1                            | 18.5                                 | 638                                                  | 8.1                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| NOV<br>12... | 103                                                            | 260                                                            | <0.1                                                 | <0.01                                                | --                                                   | 0.5                                                                | 0.04                                        |
| JAN<br>26... | 101                                                            | 420                                                            | 0.2                                                  | 0.06                                                 | 0.54                                                 | 0.6                                                                | 0.07                                        |
| APR<br>22... | 103                                                            | 150                                                            | <0.1                                                 | 0.04                                                 | 2.7                                                  | 2.7                                                                | 0.03                                        |
| JUL<br>07... | 104                                                            | 110                                                            | <0.1                                                 | 0.03                                                 | 1.2                                                  | 1.2                                                                | 0.30                                        |

## 06284380 ROAN WASH NEAR GARLAND, WY

LOCATION.--Lat 44°43'55", long 108°37'11", in NE1/4 sec.23, T.55 N., R.98 W., Park County, Hydrologic Unit 10080014, at upstream end of bridge on county road, 0.4 mi upstream from mouth, 3.9 mi southwest of Garland, and 7.5 mi east of Powell.

PERIOD OF RECORD.--October 1984 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>01... | 1100 | 8.8                                             | 12.5                                 | 0.01                                                            | <0.01                                                        | 0.09                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>07... | 1610 | 34                                              | 18.0                                 | 0.02                                                            | <0.01                                                        | 1.0                       | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>13... | 1005 | 52                                              | 15.0                                 | 0.02                                                            | <0.01                                                        | 0.08                      | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>30... | 0955 | 21                                              | 10.0                                 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## YELLOWSTONE RIVER BASIN

06284400 SHOSHONE RIVER NEAR GARLAND, WY

LOCATION.--Lat 44°44'20", long 108°35'38", in SE1/4 SE1/4 sec.13, T.55 N., R.98 W., Park County, Hydrologic Unit 10080014, on right bank 50 ft downstream from bridge on county road, 600 ft downstream from Penrose Dam, 1.3 mi upstream from Bitter Creek, 4.3 mi southeast of Garland, and 8.0 mi east of Powell.

DRAINAGE AREA.--2,036 mi<sup>2</sup>.

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| MAY<br>29... | 1425 | 850                                             | 15.0                                 | 2.0                                                  | 0.12                                                 | 14                                                   | 14                                                                 | 9.1                                         |
| JUN<br>30... | 1630 | 52                                              | 23.0                                 | 0.3                                                  | 0.05                                                 | 1.2                                                  | 1.2                                                                | 0.02                                        |

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| MAY<br>01... | 0930 | 346                                             | 11.0                                 | <0.01                                                           | <0.01                                                        | 0.01                      | <0.01                      | <0.01                      | <0.01                      |
| JUN<br>01... | 1150 | 252                                             | 12.0                                 | 0.01                                                            | 0.01                                                         | 0.03                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>08... | 1050 | 132                                             | 17.0                                 | 0.03                                                            | <0.01                                                        | 0.22                      | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>13... | 1040 | 181                                             | 16.0                                 | 0.02                                                            | 0.01                                                         | 0.05                      | <0.01                      | <0.01                      | 0.01                       |

06284450 BITTER CREEK BELOW SEWAGE LAGOON, NEAR POWELL, WY

LOCATION.--Lat 44°47'10", long 108°43'44", in SE1/4 NW1/4 SW1/4 sec.36, T.56 N., R.99 W., Park County, Hydrologic Unit 10080014, 0.7 mi upstream from bridge on County Road 7, 1.9 mi northeast of water tower in Powell, and 3.4 mi northwest of Garland.

PERIOD OF RECORD.--March 1981 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| NOV<br>13... | 1600 | 9.1                                             | 1620                                              | 8.1                            | 0.5                                  | 649                                                  | 12.9                                |
| JAN<br>27... | 1420 | 4.1                                             | 1640                                              | 8.2                            | 6.0                                  | 646                                                  | 10.9                                |
| APR<br>22... | 1730 | 19                                              | 840                                               | 8.3                            | 11.0                                 | 651                                                  | 10.0                                |
| JUL<br>08... | 0830 | 73                                              | 685                                               | 8.2                            | 14.5                                 | 645                                                  | 8.9                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| NOV<br>13... | 106                                                            | 210                                                            | 2.1                                                  | 0.02                                                 | 1.2                                                  | 1.2                                                                | 0.22                                        |
| JAN<br>27... | 104                                                            | 470                                                            | 4.4                                                  | 0.28                                                 | 1.2                                                  | 1.5                                                                | 0.60                                        |
| APR<br>22... | 107                                                            | 570                                                            | 1.0                                                  | 0.14                                                 | 0.96                                                 | 1.1                                                                | 0.18                                        |
| JUL<br>08... | 104                                                            | 770                                                            | 1.5                                                  | 0.09                                                 | 2.3                                                  | 2.4                                                                | 0.93                                        |



06284500 BITTER CREEK NEAR GARLAND, WY

LOCATION.--Lat 44°45'13", long 108°35'29", in SW1/4 SW1/4 SW1/4 sec.7, T.55 N., R.97 W., Big Horn County, Hydrologic Unit 10080014, on left bank 100 ft downstream from bridge on county road, 1.0 mi upstream from mouth, 4.0 mi southeast of Garland, and 5.0 mi southwest of Byron.

DRAINAGE AREA.--80.5 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1950 to December 1953, October 1957 to September 1960, October 1968 to September 1987 (discontinued).

REVISED RECORDS.--WSP 1709: Drainage area. WRD WY 1975: 1960(M), 1969(M), 1973(M).

GAGE.--Water-stage recorder. Elevation of gage is 4,080 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 10-17, Dec. 9 to Jan. 31, Mar. 11 to Apr. 22, and Apr. 25-30. Records good except those for estimated daily discharges, which are poor. Flow is mainly return from Garland Canal system of Shoshone irrigation project.

AVERAGE DISCHARGE.--25 years (water years 1951-53, 1958-60, 1969-87), 143 ft<sup>3</sup>/s, 103,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,230 ft<sup>3</sup>/s, July 4, 1975, gage height, 4.74 ft, from rating curve extended above 580 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow; minimum daily, 0.50 ft<sup>3</sup>/s, Jan. 30 to Feb. 3, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 771 ft<sup>3</sup>/s, July 11, gage height, 3.73 ft; minimum daily, 17 ft<sup>3</sup>/s, Jan. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY   | JUN   | JUL   | AUG    | SEP   |
|-------------|-------|-------|------|------|------|------|------|-------|-------|-------|--------|-------|
| 1           | 272   | 37    | 29   | 23   | 23   | 25   | 110  | 214   | 155   | 257   | 353    | 237   |
| 2           | 263   | 36    | 29   | 24   | 23   | 25   | 110  | 225   | 144   | 250   | 347    | 224   |
| 3           | 270   | 36    | 28   | 24   | 23   | 25   | 110  | 231   | 135   | 264   | 320    | 217   |
| 4           | 277   | 35    | 30   | 24   | 23   | 25   | 100  | 229   | 124   | 279   | 297    | 231   |
| 5           | 269   | 35    | 28   | 24   | 23   | 25   | 100  | 208   | 150   | 312   | 268    | 239   |
| 6           | 242   | 39    | 28   | 22   | 22   | 25   | 100  | 213   | 187   | 273   | 265    | 259   |
| 7           | 229   | 37    | 30   | 20   | 22   | 25   | 100  | 233   | 222   | 246   | 288    | 285   |
| 8           | 234   | 35    | 28   | 20   | 23   | 26   | 100  | 233   | 239   | 244   | 308    | 274   |
| 9           | 231   | 31    | 27   | 22   | 23   | 22   | 100  | 246   | 271   | 256   | 303    | 262   |
| 10          | 251   | 30    | 25   | 23   | 23   | 22   | 100  | 248   | 276   | 287   | 316    | 284   |
| 11          | 271   | 29    | 26   | 24   | 23   | 23   | 100  | 253   | 275   | 504   | 320    | 308   |
| 12          | 266   | 29    | 26   | 24   | 23   | 22   | 100  | 254   | 280   | 394   | 310    | 310   |
| 13          | 275   | 30    | 27   | 23   | 23   | 21   | 100  | 279   | 298   | 360   | 307    | 314   |
| 14          | 273   | 31    | 27   | 20   | 23   | 22   | 100  | 281   | 306   | 350   | 314    | 278   |
| 15          | 271   | 32    | 27   | 17   | 22   | 23   | 100  | 278   | 308   | 361   | 330    | 247   |
| 16          | 232   | 32    | 28   | 18   | 22   | 23   | 110  | 295   | 283   | 344   | 355    | 259   |
| 17          | 158   | 32    | 28   | 19   | 22   | 28   | 110  | 327   | 262   | 306   | 347    | 267   |
| 18          | 86    | 33    | 28   | 19   | 22   | 31   | 110  | 337   | 251   | 304   | 296    | 265   |
| 19          | 59    | 34    | 28   | 19   | 22   | 34   | 110  | 346   | 253   | 312   | 282    | 261   |
| 20          | 54    | 34    | 27   | 19   | 22   | 40   | 110  | 366   | 242   | 284   | 300    | 266   |
| 21          | 49    | 33    | 26   | 20   | 22   | 45   | 110  | 336   | 247   | 265   | 277    | 273   |
| 22          | 41    | 34    | 26   | 20   | 22   | 50   | 112  | 313   | 269   | 300   | 267    | 282   |
| 23          | 40    | 32    | 27   | 20   | 23   | 60   | 131  | 279   | 284   | 290   | 305    | 280   |
| 24          | 39    | 32    | 27   | 21   | 24   | 90   | 129  | 252   | 282   | 295   | 307    | 263   |
| 25          | 40    | 32    | 27   | 21   | 26   | 120  | 155  | 248   | 289   | 291   | 298    | 260   |
| 26          | 40    | 31    | 27   | 22   | 26   | 160  | 165  | 265   | 304   | 306   | 327    | 273   |
| 27          | 40    | 30    | 26   | 22   | 26   | 130  | 175  | 598   | 308   | 279   | 322    | 267   |
| 28          | 38    | 31    | 25   | 23   | 26   | 120  | 185  | 273   | 320   | 265   | 326    | 264   |
| 29          | 38    | 31    | 25   | 23   | ---  | 120  | 195  | 186   | 317   | 279   | 314    | 209   |
| 30          | 38    | 29    | 24   | 23   | ---  | 120  | 208  | 172   | 281   | 311   | 302    | 193   |
| 31          | 38    | ---   | 22   | 23   | ---  | 120  | ---  | 167   | ---   | 322   | 284    | ---   |
| TOTAL       | 4924  | 982   | 836  | 666  | 647  | 1647 | 3645 | 8385  | 7562  | 9390  | 9555   | 7851  |
| MEAN        | 159   | 32.7  | 27.0 | 21.5 | 23.1 | 53.1 | 122  | 270   | 252   | 303   | 308    | 262   |
| MAX         | 277   | 39    | 30   | 24   | 26   | 160  | 208  | 598   | 320   | 504   | 355    | 314   |
| MIN         | 38    | 29    | 22   | 17   | 22   | 21   | 100  | 167   | 124   | 244   | 265    | 193   |
| AC-FT       | 9770  | 1950  | 1660 | 1320 | 1280 | 3270 | 7230 | 16630 | 15000 | 18630 | 18950  | 15570 |
| CAL YR 1986 | TOTAL | 56658 |      | MEAN | 155  | MAX  | 438  | MIN   | 14    | AC-FT | 112400 |       |
| WTR YR 1987 | TOTAL | 56090 |      | MEAN | 154  | MAX  | 598  | MIN   | 17    | AC-FT | 111300 |       |

## YELLOWSTONE RIVER BASIN

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06284500 BITTER CREEK NEAR GARLAND, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-53, 1958-61, 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1969 to September 1983.

WATER TEMPERATURES: July 1969 to September 1983.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | PH<br>(STAND-<br>ARD<br>UNITS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) |
|--------------|------|-------------------------------------------------|--------------------------------|---------------------------------------------------|--------------------------------------|----------------------------------------------------------------|
| OCT<br>06... | 1130 | 255                                             | 7.9                            | 820                                               | 11.0                                 | --                                                             |
| NOV<br>13... | 1500 | 30                                              | 8.2                            | 1440                                              | 0.0                                  | K100                                                           |
| DEC<br>16... | 1300 | 28                                              | 8.1                            | 1580                                              | 0.0                                  | --                                                             |
| JAN<br>28... | 0830 | 23                                              | 8.3                            | 1540                                              | 0.0                                  | 270                                                            |
| MAR<br>11... | 1440 | 23                                              | 8.4                            | 1860                                              | 9.0                                  | --                                                             |
| APR<br>22... | 1430 | 114                                             | 8.2                            | 820                                               | 11.0                                 | 310                                                            |
| JUN<br>01... | 1345 | 163                                             | 8.2                            | 740                                               | 12.5                                 | --                                                             |
| JUN<br>30... | 1530 | 254                                             | 7.9                            | 695                                               | 19.0                                 | --                                                             |
| JUL<br>07... | 1350 | 235                                             | 8.1                            | 690                                               | 18.5                                 | 460                                                            |
| AUG<br>13... | 1200 | 316                                             | 8.1                            | 710                                               | 16.0                                 | --                                                             |

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

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| MAY<br>29... | 1300 | 425                                             | 690                                               | 8.1                            | 16.0                                 | 3.4                                                  | 0.15                                                 | 1.8                                                  | 2.0                                                                | 0.39                                        |
| JUN<br>30... | 1530 | 254                                             | 695                                               | 7.9                            | 19.0                                 | 2.3                                                  | 0.09                                                 | 0.81                                                 | 0.9                                                                | 0.40                                        |

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>01... | 1345 | 163                                             | 12.5                                 | 0.01                                                            | 0.01                                                         | 0.02                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>07... | 1350 | 235                                             | 18.5                                 | 0.06                                                            | 0.01                                                         | 0.13                      | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>13... | 1200 | 316                                             | 16.0                                 | 0.02                                                            | 0.02                                                         | 0.03                      | <0.01                      | <0.01                      | <0.01                      |

## YELLOWSTONE RIVER BASIN

06284800 WHISTLE CREEK NEAR GARLAND, WY

LOCATION.--Lat 44°43'21", long 108°34'46", in NW1/4 NW1/4 NE1/4 sec.30, T.55 N., R.97 W., Big Horn County, Hydrologic Unit 10080014, on right bank 300 ft upstream from Elk-Lovell Canal, 5.6 mi southeast of Garland, and 6.3 mi southwest of Byron.

DRAINAGE AREA.--101 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1958 to May 1960, October 1968 to September 1987 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 4,150 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May 31, 1960, at different datum.

REMARKS.--Estimated daily discharges: Oct. 5, 6, Oct. 16 to Mar. 25, Mar. 29, 30, Apr. 2-30, and May 19 to June 7. Records fair after June 10 and poor before. Part of flow is return flow from areas irrigated by diversions from the Shoshone River.

AVERAGE DISCHARGE.--20 years (water years 1959, 1969-87), 25.9 ft<sup>3</sup>/s, 18,760 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,780 ft<sup>3</sup>/s, July 3, 1975, gage height, 12.44 ft, from floodmarks, on basis of slope-area measurement of peak flow; minimum daily, 0.05 ft<sup>3</sup>/s, Jan. 12, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 19, 1961, reached a discharge of 4,260 ft<sup>3</sup>/s, at site 6.5 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 483 ft<sup>3</sup>/s, May 27, gage height, 3.89 ft, from floodmarks; minimum daily, 0.27 ft<sup>3</sup>/s, Jan. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR   | APR  | MAY  | JUN   | JUL   | AUG   | SEP  |
|-------------|-------|---------|-------|-------|-------|-------|------|------|-------|-------|-------|------|
| 1           | 31    | 2.4     | 1.1   | .58   | .33   | 2.1   | 28   | 29   | 5.0   | 33    | 54    | 48   |
| 2           | 35    | 2.3     | 1.1   | .60   | .34   | 2.1   | 25   | 36   | 4.3   | 39    | 46    | 44   |
| 3           | 28    | 2.3     | 1.0   | .60   | .35   | 2.2   | 24   | 40   | 3.8   | 42    | 48    | 44   |
| 4           | 28    | 2.3     | 1.0   | .60   | .35   | 2.2   | 23   | 40   | 3.5   | 39    | 42    | 49   |
| 5           | 28    | 2.3     | 1.0   | .55   | .36   | 2.2   | 23   | 39   | 6.2   | 40    | 43    | 48   |
| 6           | 30    | 2.4     | 1.0   | .50   | .37   | 2.2   | 23   | 39   | 18    | 42    | 30    | 50   |
| 7           | 25    | 2.3     | 1.0   | .40   | .42   | 2.2   | 23   | 37   | 42    | 40    | 40    | 47   |
| 8           | 26    | 2.2     | .90   | .42   | .48   | 2.2   | 23   | 40   | 53    | 35    | 42    | 49   |
| 9           | 23    | 2.0     | .76   | .43   | .52   | 2.1   | 23   | 47   | 26    | 35    | 45    | 50   |
| 10          | 24    | 1.9     | .66   | .43   | .52   | 2.1   | 23   | 49   | 46    | 29    | 46    | 46   |
| 11          | 32    | 1.9     | .68   | .44   | .52   | 2.0   | 23   | 48   | 36    | 121   | 34    | 44   |
| 12          | 28    | 1.9     | .70   | .44   | .52   | 1.9   | 23   | 50   | 41    | 64    | 33    | 47   |
| 13          | 27    | 2.0     | .72   | .40   | .52   | 1.9   | 23   | 56   | 42    | 55    | 32    | 42   |
| 14          | 26    | 2.0     | .74   | .35   | .52   | 2.0   | 23   | 51   | 44    | 45    | 29    | 46   |
| 15          | 29    | 2.1     | .76   | .27   | .52   | 2.0   | 23   | 49   | 40    | 40    | 35    | 49   |
| 16          | 13    | 2.1     | .76   | .28   | .54   | 2.0   | 24   | 46   | 32    | 38    | 44    | 48   |
| 17          | 10    | 2.1     | .76   | .29   | .54   | 2.5   | 24   | 46   | 33    | 40    | 39    | 54   |
| 18          | 6.0   | 2.1     | .76   | .29   | .54   | 2.6   | 24   | 49   | 34    | 36    | 39    | 53   |
| 19          | 3.9   | 2.1     | .74   | .30   | .56   | 3.0   | 24   | 52   | 39    | 54    | 40    | 49   |
| 20          | 3.6   | 2.1     | .72   | .30   | .60   | 3.2   | 24   | 55   | 47    | 43    | 41    | 50   |
| 21          | 3.2   | 2.1     | .70   | .30   | .70   | 4.5   | 24   | 52   | 41    | 35    | 38    | 47   |
| 22          | 2.7   | 2.0     | .72   | .30   | .90   | 6.0   | 24   | 48   | 41    | 40    | 39    | 40   |
| 23          | 2.6   | 1.9     | .72   | .30   | 1.1   | 11    | 24   | 44   | 30    | 38    | 48    | 35   |
| 24          | 2.5   | 1.8     | .72   | .30   | 1.7   | 17    | 24   | 38   | 35    | 39    | 47    | 39   |
| 25          | 2.5   | 1.6     | .72   | .31   | 2.3   | 25    | 24   | 37   | 30    | 38    | 39    | 41   |
| 26          | 2.5   | 1.5     | .70   | .31   | 2.3   | 36    | 24   | 45   | 38    | 43    | 39    | 44   |
| 27          | 2.5   | 1.4     | .68   | .32   | 2.3   | 28    | 24   | 199  | 38    | 37    | 45    | 47   |
| 28          | 2.5   | 1.3     | .66   | .32   | 2.2   | 28    | 24   | 98   | 31    | 35    | 43    | 47   |
| 29          | 2.5   | 1.3     | .64   | .32   | ---   | 24    | 24   | 65   | 40    | 49    | 44    | 44   |
| 30          | 2.4   | 1.2     | .60   | .32   | ---   | 24    | 24   | 36   | 44    | 61    | 53    | 42   |
| 31          | 2.4   | ---     | .54   | .33   | ---   | 31    | ---  | 14   | ---   | 41    | 52    | ---  |
| TOTAL       | 484.8 | 58.9    | 24.26 | 11.90 | 22.92 | 279.2 | 713  | 1574 | 963.8 | 1366  | 1289  | 1383 |
| MEAN        | 15.6  | 1.96    | .78   | .38   | .82   | 9.01  | 23.8 | 50.8 | 32.1  | 44.1  | 41.6  | 46.1 |
| MAX         | 35    | 2.4     | 1.1   | .60   | 2.3   | 36    | 28   | 199  | 53    | 121   | 54    | 54   |
| MIN         | 2.4   | 1.2     | .54   | .27   | .33   | 1.9   | 23   | 14   | 3.5   | 29    | 29    | 35   |
| AC-FT       | 962   | 117     | 48    | 24    | 45    | 554   | 1410 | 3120 | 1910  | 2710  | 2560  | 2740 |
| CAL YR 1986 | TOTAL | 7332.38 |       | MEAN  | 20.1  | MAX   | 123  | MIN  | .54   | AC-FT | 14540 |      |
| WTR YR 1987 | TOTAL | 8170.78 |       | MEAN  | 22.4  | MAX   | 199  | MIN  | .27   | AC-FT | 16210 |      |

06284800 WHISTLE CREEK NEAR GARLAND, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-60, 1969 to September 1987 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1969 to September 1983.

WATER TEMPERATURES: July 1969 to September 1983.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | PH<br>(STAND-<br>ARD<br>UNITS) |
|-------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------------|--------------------------------|
| OCT   |      |                                                 |                                                   |                                      |                                |
| 06... | 0940 | 33                                              | 770                                               | 10.0                                 | 8.2                            |
| NOV   |      |                                                 |                                                   |                                      |                                |
| 17... | 1500 | 2.1                                             | 5250                                              | 1.0                                  | 8.0                            |
| DEC   |      |                                                 |                                                   |                                      |                                |
| 16... | 1100 | 0.76                                            | 3840                                              | 0.0                                  | 8.2                            |
| JAN   |      |                                                 |                                                   |                                      |                                |
| 28... | 1110 | 0.32                                            | 4750                                              | 0.0                                  | 8.3                            |
| MAR   |      |                                                 |                                                   |                                      |                                |
| 16... | 1600 | 2.0                                             | 4450                                              | 2.5                                  | 8.1                            |
| APR   |      |                                                 |                                                   |                                      |                                |
| 30... | 0830 | 23                                              | 1050                                              | 12.0                                 | 8.2                            |
| JUN   |      |                                                 |                                                   |                                      |                                |
| 01... | 1000 | 4.6                                             | 2170                                              | 11.5                                 | 8.4                            |
| JUL   |      |                                                 |                                                   |                                      |                                |
| 08... | 1315 | 45                                              | 660                                               | 21.0                                 | 8.3                            |
| AUG   |      |                                                 |                                                   |                                      |                                |
| 20... | 1550 | 47                                              | 630                                               | 22.0                                 | 8.1                            |
| SEP   |      |                                                 |                                                   |                                      |                                |
| 22... | 1440 | 48                                              | 840                                               | 18.0                                 | 8.3                            |

## YELLOWSTONE RIVER BASIN

06285100 SHOSHONE RIVER NEAR LOVELL, WY

LOCATION.--Lat 44°50'19", long 108°26'04", in NW1/4 NE1/4 NE1/4 sec.17, T.56 N., R.96 W., Big Horn County, Hydrologic Unit 10080014, on left bank 20 ft upstream from bridge on County Road 9 and 1.5 mi west of Lovell. Prior to Nov. 15, 1986, at site 500 ft downstream.

DRAINAGE AREA.--2,350 mi<sup>2</sup>, approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,850 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1976, at site 500 ft downstream, at datum 2.00 ft higher. Oct. 1, 1976 to Sept. 30, 1980, at site 500 ft downstream, at datum 1.00 ft higher. Oct. 1, 1981 to Nov. 13, 1986, at site 500 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 10-15, Nov. 19 to Feb. 2, May 16-29, and June 8, 9. Records fair except those for estimated daily discharges, which are poor. Flow regulated by Buffalo Bill Reservoir. (See station 06281500.) Natural flow of stream affected by storage reservoirs, power development, diversions upstream from station for irrigation of about 143,000 acres, of which about 8,000 acres are downstream from station, and return flow from irrigated areas.

AVERAGE DISCHARGE.--21 years, 978 ft<sup>3</sup>/s, 708,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,400 ft<sup>3</sup>/s, June 10, 1981, gage height, 9.16 ft, site then in use, at present datum; maximum gage height, 10.09 ft, Feb. 3, 1972 (backwater from ice), site then in use, at present datum; minimum daily discharge, 27 ft<sup>3</sup>/s, May 31, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,980 ft<sup>3</sup>/s, June 9, gage height, 7.31 ft; minimum daily, 204 ft<sup>3</sup>/s, Apr. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG    | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| 1           | 670   | 682    | 590   | 500   | 370   | 408   | 364   | 286   | 515   | 375   | 823    | 418   |
| 2           | 660   | 666    | 580   | 500   | 400   | 436   | 355   | 319   | 420   | 346   | 798    | 326   |
| 3           | 754   | 682    | 580   | 500   | 424   | 506   | 350   | 367   | 373   | 478   | 591    | 316   |
| 4           | 655   | 694    | 580   | 500   | 414   | 602   | 355   | 356   | 420   | 462   | 469    | 435   |
| 5           | 525   | 683    | 570   | 500   | 404   | 511   | 363   | 308   | 340   | 553   | 340    | 514   |
| 6           | 462   | 761    | 570   | 460   | 401   | 506   | 363   | 293   | 451   | 506   | 356    | 585   |
| 7           | 424   | 753    | 570   | 450   | 401   | 509   | 366   | 293   | 806   | 426   | 476    | 612   |
| 8           | 437   | 718    | 540   | 450   | 408   | 560   | 328   | 298   | 2030  | 382   | 476    | 610   |
| 9           | 443   | 695    | 520   | 460   | 417   | 479   | 313   | 314   | 3390  | 384   | 542    | 551   |
| 10          | 475   | 540    | 530   | 470   | 420   | 455   | 273   | 343   | 3810  | 397   | 502    | 531   |
| 11          | 546   | 545    | 540   | 480   | 436   | 485   | 276   | 384   | 3590  | 1450  | 482    | 565   |
| 12          | 541   | 550    | 540   | 480   | 463   | 464   | 371   | 396   | 3570  | 1660  | 489    | 619   |
| 13          | 541   | 560    | 542   | 460   | 451   | 459   | 307   | 414   | 3490  | 1090  | 469    | 643   |
| 14          | 540   | 565    | 544   | 450   | 448   | 444   | 204   | 298   | 3460  | 980   | 495    | 664   |
| 15          | 528   | 620    | 546   | 430   | 425   | 426   | 209   | 288   | 3340  | 891   | 584    | 479   |
| 16          | 672   | 649    | 510   | 400   | 418   | 396   | 371   | 444   | 2730  | 814   | 687    | 435   |
| 17          | 719   | 649    | 480   | 400   | 414   | 394   | 349   | 495   | 1700  | 814   | 671    | 499   |
| 18          | 923   | 649    | 500   | 400   | 414   | 389   | 298   | 671   | 902   | 944   | 598    | 557   |
| 19          | 730   | 635    | 500   | 400   | 414   | 385   | 488   | 612   | 610   | 926   | 489    | 526   |
| 20          | 657   | 620    | 500   | 400   | 400   | 385   | 572   | 664   | 486   | 749   | 471    | 518   |
| 21          | 665   | 620    | 500   | 400   | 402   | 376   | 502   | 679   | 468   | 741   | 382    | 496   |
| 22          | 660   | 615    | 500   | 400   | 408   | 379   | 351   | 725   | 579   | 656   | 386    | 455   |
| 23          | 674   | 610    | 500   | 400   | 412   | 369   | 209   | 576   | 612   | 535   | 481    | 423   |
| 24          | 653   | 605    | 500   | 400   | 395   | 288   | 228   | 556   | 563   | 495   | 565    | 389   |
| 25          | 680   | 600    | 500   | 400   | 404   | 349   | 233   | 522   | 717   | 605   | 627    | 401   |
| 26          | 652   | 600    | 500   | 400   | 423   | 284   | 368   | 508   | 569   | 515   | 738    | 435   |
| 27          | 640   | 600    | 500   | 400   | 404   | 367   | 412   | 556   | 508   | 438   | 753    | 451   |
| 28          | 633   | 600    | 500   | 370   | 410   | 363   | 356   | 1410  | 425   | 556   | 766    | 480   |
| 29          | 650   | 600    | 500   | 360   | ---   | 355   | 235   | 1040  | 412   | 806   | 690    | 444   |
| 30          | 700   | 600    | 500   | 340   | ---   | 365   | 259   | 935   | 370   | 702   | 647    | 339   |
| 31          | 686   | ---    | 500   | 350   | ---   | 339   | ---   | 649   | ---   | 953   | 605    | ---   |
| TOTAL       | 19195 | 18966  | 16332 | 13310 | 11600 | 13033 | 10028 | 15999 | 41656 | 21629 | 17448  | 14716 |
| MEAN        | 619   | 632    | 527   | 429   | 414   | 420   | 334   | 516   | 1389  | 698   | 563    | 491   |
| MAX         | 923   | 761    | 590   | 500   | 463   | 602   | 572   | 1410  | 3810  | 1660  | 823    | 664   |
| MIN         | 424   | 540    | 480   | 340   | 370   | 284   | 204   | 286   | 340   | 346   | 340    | 316   |
| AC-FT       | 38070 | 37620  | 32390 | 26400 | 23010 | 25850 | 19890 | 31730 | 82620 | 42900 | 34610  | 29190 |
| CAL YR 1986 | TOTAL | 445968 |       | MEAN  | 1222  | MAX   | 7330  | MIN   | 327   | AC-FT | 884600 |       |
| WTR YR 1987 | TOTAL | 213912 |       | MEAN  | 586   | MAX   | 3810  | MIN   | 204   | AC-FT | 424300 |       |



06285100 SHOSHONE RIVER NEAR LOVELL, WY--Continued

## WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1966 to September 1983.

WATER TEMPERATURES: October 1966 to September 1983.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|
| NOV<br>14... | 1100 | 565                                             | 920                                               | 0.0                                  | 300                                    | 62                                           | 36                                                   | 99                                           | 3                                       |
| FEB<br>02... | 1030 | 510                                             | 1040                                              | 1.0                                  | 390                                    | 100                                          | 34                                                   | 79                                           | 2                                       |
| APR<br>23... | 1130 | 283                                             | 1000                                              | 11.0                                 | 270                                    | 70                                           | 22                                                   | 81                                           | 2                                       |
| MAY<br>29... | 1200 | 1250                                            | 1150                                              | 15.0                                 | --                                     | --                                           | --                                                   | --                                           | --                                      |
| JUN<br>10... | 1130 | 3860                                            | 860                                               | 9.0                                  | --                                     | --                                           | --                                                   | --                                           | --                                      |
| 30...        | 1345 | 432                                             | 760                                               | 21.0                                 | --                                     | --                                           | --                                                   | --                                           | --                                      |
| JUL<br>09... | 1000 | 366                                             | 960                                               | 17.0                                 | 250                                    | 61                                           | 23                                                   | 82                                           | 2                                       |
| AUG<br>20... | 1330 | 540                                             | 860                                               | 18.5                                 | --                                     | --                                           | --                                                   | --                                           | --                                      |
| SEP<br>22... | 1100 | 462                                             | 855                                               | 13.5                                 | --                                     | --                                           | --                                                   | --                                           | --                                      |
| 30...        | 1140 | 293                                             | 870                                               | 13.0                                 | --                                     | --                                           | --                                                   | --                                           | --                                      |

| DATE         | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SI02) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) |
|--------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|
| NOV<br>14... | 3.5                                                 | 240                                             | 240                                           | 8.1                                                 | 0.6                                                | 15                                                | 610                                                            | 0.83                                                |
| FEB<br>02... | 5.8                                                 | 250                                             | 270                                           | 13                                                  | 0.7                                                | 14                                                | 670                                                            | 0.91                                                |
| APR<br>23... | 4.4                                                 | 170                                             | 240                                           | 16                                                  | 0.5                                                | 15                                                | 550                                                            | 0.75                                                |
| MAY<br>29... | --                                                  | --                                              | --                                            | --                                                  | --                                                 | --                                                | --                                                             | --                                                  |
| JUN<br>10... | --                                                  | --                                              | --                                            | --                                                  | --                                                 | --                                                | --                                                             | --                                                  |
| 30...        | --                                                  | --                                              | --                                            | --                                                  | --                                                 | --                                                | --                                                             | --                                                  |
| JUL<br>09... | 3.5                                                 | 180                                             | 220                                           | 9.3                                                 | 0.5                                                | 13                                                | 520                                                            | 0.71                                                |
| AUG<br>20... | --                                                  | --                                              | --                                            | --                                                  | --                                                 | --                                                | --                                                             | --                                                  |
| SEP<br>22... | --                                                  | --                                              | --                                            | --                                                  | --                                                 | --                                                | --                                                             | --                                                  |
| 30...        | --                                                  | --                                              | --                                            | --                                                  | --                                                 | --                                                | --                                                             | --                                                  |

| DATE         | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) |
|--------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------|
| NOV<br>14... | 928                                               | --                                                   | 1.1                                                           | --                                                   | --                                                   | --                                                                 | --                                          | 0.01                                                 |
| FEB<br>02... | 918                                               | --                                                   | 1.0                                                           | --                                                   | --                                                   | --                                                                 | --                                          | 0.02                                                 |
| APR<br>23... | 421                                               | --                                                   | 0.5                                                           | --                                                   | --                                                   | --                                                                 | --                                          | 0.03                                                 |
| MAY<br>29... | --                                                | 1.7                                                  | --                                                            | 0.12                                                 | 16                                                   | 16                                                                 | 7.9                                         | --                                                   |
| JUN<br>10... | --                                                | --                                                   | --                                                            | --                                                   | --                                                   | --                                                                 | --                                          | --                                                   |
| 30...        | --                                                | 1.3                                                  | --                                                            | 0.06                                                 | 1.1                                                  | 1.2                                                                | 0.07                                        | --                                                   |
| JUL<br>09... | 514                                               | --                                                   | 1.5                                                           | --                                                   | --                                                   | --                                                                 | --                                          | 0.06                                                 |
| AUG<br>20... | --                                                | --                                                   | --                                                            | --                                                   | --                                                   | --                                                                 | --                                          | --                                                   |
| SEP<br>22... | --                                                | --                                                   | --                                                            | --                                                   | --                                                   | --                                                                 | --                                          | --                                                   |
| 30...        | --                                                | --                                                   | --                                                            | --                                                   | --                                                   | --                                                                 | --                                          | --                                                   |

## YELLOWSTONE RIVER BASIN

06285400 SAGE CREEK AT SIDON CANAL, NEAR DEAVER, WY

LOCATION.--Lat 44°53'08", long 108°33'01", in NE1/4 NE1/4 NW1/4 sec.34, T.57 N., R.97 W., Big Horn County, Hydrologic Unit 10080014, on left bank 300 ft downstream from Polecat Creek, 800 ft upstream from Sidon Canal crossing, and 2.4 mi east of Deaver.

DRAINAGE AREA.--341 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1958 to May 1960, October 1968 to September 1987 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 4,020 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 5-20, 26, Dec. 1 to Mar. 17, Apr. 30 to May 22, May 27 to July 14, Aug. 1-7, 11-15, and Aug. 22 to Sept. 30. Records poor. Flow is mostly return flow from land irrigated by canals diverting water from Shoshone River.

AVERAGE DISCHARGE.--20 years (water years 1959, 1969-87), 65.0 ft<sup>3</sup>/s, 47,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,250 ft<sup>3</sup>/s, June 8, 1958, gage height, 9.22 ft, from floodmark, from rating curve extended above 500 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily discharge, 0.50 ft<sup>3</sup>/s, Feb. 2-6, Feb. 21 to Mar. 5, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 654 ft<sup>3</sup>/s, May 27, gage height, 5.91 ft; minimum daily, 7.0 ft<sup>3</sup>/s, Jan. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN   | FEB   | MAR  | APR  | MAY  | JUN  | JUL   | AUG   | SEP  |
|-------------|-------|---------|------|-------|-------|------|------|------|------|-------|-------|------|
| 1           | 130   | 12      | 15   | 15    | 9.5   | 14   | 26   | 89   | 84   | 69    | 110   | 120  |
| 2           | 112   | 16      | 15   | 16    | 9.7   | 14   | 21   | 82   | 78   | 78    | 100   | 110  |
| 3           | 122   | 17      | 15   | 16    | 10    | 15   | 21   | 125  | 72   | 85    | 108   | 110  |
| 4           | 137   | 19      | 15   | 16    | 10    | 15   | 21   | 131  | 62   | 80    | 94    | 120  |
| 5           | 151   | 15      | 15   | 14    | 10    | 15   | 19   | 102  | 70   | 82    | 100   | 120  |
| 6           | 134   | 14      | 15   | 13    | 11    | 15   | 17   | 104  | 80   | 85    | 84    | 124  |
| 7           | 151   | 13      | 15   | 10    | 12    | 15   | 16   | 122  | 100  | 82    | 150   | 118  |
| 8           | 163   | 13      | 15   | 10    | 13    | 15   | 15   | 133  | 120  | 73    | 165   | 120  |
| 9           | 157   | 13      | 14   | 11    | 13    | 15   | 14   | 108  | 80   | 70    | 104   | 124  |
| 10          | 152   | 13      | 13   | 11    | 13    | 15   | 13   | 134  | 117  | 62    | 105   | 110  |
| 11          | 126   | 14      | 14   | 11    | 13    | 14   | 13   | 142  | 99   | 250   | 90    | 110  |
| 12          | 125   | 14      | 16   | 11    | 13    | 13   | 11   | 110  | 109  | 170   | 86    | 120  |
| 13          | 133   | 15      | 18   | 10    | 13    | 13   | 11   | 118  | 110  | 145   | 84    | 106  |
| 14          | 142   | 15      | 21   | 9.0   | 13    | 14   | 10   | 140  | 118  | 139   | 82    | 111  |
| 15          | 141   | 15      | 21   | 7.0   | 13    | 14   | 21   | 140  | 110  | 133   | 130   | 120  |
| 16          | 138   | 15      | 20   | 7.6   | 13    | 14   | 25   | 149  | 90   | 116   | 192   | 120  |
| 17          | 117   | 15      | 20   | 8.0   | 13    | 14   | 68   | 164  | 90   | 116   | 140   | 130  |
| 18          | 68    | 16      | 20   | 8.0   | 13    | 16   | 128  | 159  | 95   | 127   | 142   | 130  |
| 19          | 22    | 16      | 19   | 8.2   | 13    | 16   | 129  | 140  | 100  | 129   | 138   | 120  |
| 20          | 16    | 16      | 18   | 8.4   | 13    | 14   | 133  | 170  | 110  | 115   | 115   | 120  |
| 21          | 16    | 16      | 17   | 8.6   | 13    | 12   | 103  | 160  | 100  | 116   | 98    | 115  |
| 22          | 15    | 16      | 18   | 8.6   | 13    | 11   | 69   | 154  | 89   | 121   | 98    | 100  |
| 23          | 14    | 15      | 18   | 8.6   | 13    | 12   | 71   | 144  | 69   | 119   | 110   | 90   |
| 24          | 13    | 15      | 18   | 8.6   | 14    | 12   | 65   | 163  | 73   | 112   | 110   | 96   |
| 25          | 16    | 16      | 18   | 8.6   | 15    | 12   | 64   | 165  | 65   | 102   | 100   | 100  |
| 26          | 15    | 16      | 17   | 9.0   | 15    | 12   | 68   | 155  | 77   | 93    | 100   | 104  |
| 27          | 15    | 15      | 17   | 9.0   | 15    | 13   | 72   | 327  | 78   | 91    | 110   | 110  |
| 28          | 14    | 16      | 17   | 9.0   | 15    | 12   | 77   | 240  | 67   | 87    | 105   | 110  |
| 29          | 13    | 16      | 16   | 9.0   | ---   | 11   | 79   | 150  | 77   | 83    | 110   | 104  |
| 30          | 14    | 15      | 16   | 9.0   | ---   | 19   | 84   | 120  | 89   | 79    | 130   | 100  |
| 31          | 13    | ---     | 15   | 9.2   | ---   | 19   | ---  | 100  | ---  | 88    | 127   | ---  |
| TOTAL       | 2595  | 452     | 521  | 317.4 | 354.2 | 435  | 1484 | 4440 | 2678 | 3297  | 3517  | 3392 |
| MEAN        | 83.7  | 15.1    | 16.8 | 10.2  | 12.7  | 14.0 | 49.5 | 143  | 89.3 | 106   | 113   | 113  |
| MAX         | 163   | 19      | 21   | 16    | 15    | 19   | 133  | 327  | 120  | 250   | 192   | 130  |
| MIN         | 13    | 12      | 13   | 7.0   | 9.5   | 11   | 10   | 82   | 62   | 62    | 82    | 90   |
| AC-FT       | 5150  | 897     | 1030 | 630   | 703   | 863  | 2940 | 8810 | 5310 | 6540  | 6980  | 6730 |
| CAL YR 1986 | TOTAL | 23063.2 |      | MEAN  | 63.2  | MAX  | 192  | MIN  | 8.0  | AC-FT | 45750 |      |
| WTR YR 1987 | TOTAL | 23482.6 |      | MEAN  | 64.3  | MAX  | 327  | MIN  | 7.0  | AC-FT | 46580 |      |

06285400 SAGE CREEK AT SIDON CANAL, NEAR DEEVER, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-60, 1969 to September 1987 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1969 to September 1983.

WATER TEMPERATURES: July 1969 to November 1976, September 1977 to September 1983.

REMARKS.--Daily temperature readings not available for water year 1980.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|
| NOV<br>14... | 0800 | 15                                              | 3500                                              | 0.5                                  | 1000                                   | 220                                          | 120                                                  | 450                                          | 6                                       | 5.0                                                 |
| FEB<br>03... | 0930 | 10                                              | 3330                                              | 0.0                                  | 1100                                   | 240                                          | 120                                                  | 440                                          | 6                                       | 5.4                                                 |
| APR<br>23... | 0800 | 78                                              | 1540                                              | 8.0                                  | 490                                    | 110                                          | 53                                                   | 170                                          | 3                                       | 4.4                                                 |
| JUL<br>09... | 0800 | 70                                              | 1510                                              | 15.0                                 | 450                                    | 100                                          | 49                                                   | 140                                          | 3                                       | 4.3                                                 |

| DATE         | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) |
|--------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|
| NOV<br>14... | 360                                             | 1600                                          | 25                                                  | 0.7                                                | 14                                                | 2700                                                                | 3.6                                                 | 107                                               | 2.8                                                           | 0.01                                                 |
| FEB<br>03... | 340                                             | 1600                                          | 25                                                  | 0.7                                                | 9.7                                               | 2600                                                                | 3.6                                                 | 71                                                | 2.8                                                           | 0.02                                                 |
| APR<br>23... | 190                                             | 630                                           | 13                                                  | 0.5                                                | 15                                                | 1100                                                                | 1.5                                                 | 234                                               | 1.2                                                           | 0.04                                                 |
| JUL<br>09... | 190                                             | 540                                           | 11                                                  | 0.5                                                | 14                                                | 970                                                                 | 1.3                                                 | 184                                               | 1.3                                                           | 0.08                                                 |

## YELLOWSTONE RIVER BASIN

06286200 SHOSHONE RIVER AT KANE, WY

LOCATION.--Lat 44°51'31", long 108°19'52", in NE1/4 SE1/4 SE1/4 sec.6, T.56 N., R.95 W., Big Horn County, Hydrologic Unit 10080014, at bridge on county road, 3.4 mi northeast of Lovell, 6.5 mi west of Kane, 6.6 mi upstream from high-water line of Bighorn Lake at elevation 3,640 ft, and 7.8 mi upstream from former discharge station.

DRAINAGE AREA.--2,989 mi<sup>2</sup>, at former discharge station.

PERIOD OF RECORD.--Water years 1976 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| NOV<br>14... | 1320 | 580                                             | 950                                               | 8.2                            | 0.0                                  | 658                                                  | 12.9                                |
| FEB<br>02... | 0730 | 540                                             | 1140                                              | 8.2                            | 0.5                                  | 647                                                  | 12.4                                |
| APR<br>23... | 1330 | 337                                             | 1140                                              | 8.0                            | 11.0                                 | 664                                                  | 9.8                                 |
| JUL<br>09... | 0805 | 404                                             | 1090                                              | 8.2                            | 17.0                                 | 655                                                  | 7.9                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| NOV<br>14... | 103                                                            | 360                                                            | 0.9                                                  | 0.03                                                 | 1.3                                                  | 1.3                                                                | 0.18                                        |
| FEB<br>02... | 102                                                            | 310                                                            | 0.1                                                  | 0.10                                                 | 0.80                                                 | 0.9                                                                | 0.15                                        |
| APR<br>23... | 103                                                            | K170                                                           | 0.9                                                  | 0.15                                                 | 0.85                                                 | 1.0                                                                | 0.06                                        |
| JUL<br>09... | 96                                                             | 700                                                            | 1.4                                                  | 0.09                                                 | 0.71                                                 | 0.8                                                                | 0.25                                        |

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

## 06286400 BIGHORN LAKE NEAR ST. XAVIER, MT

LOCATION.--Lat 45°18'27", long 107°57'26", in SW1/4 SE1/4 sec.18, T.6 S., R.31 E., Big Horn County, Hydrologic Unit 10080010, in block 13 of Yellowtail Dam on Bighorn River, 1.3 mi upstream from Grapevine Creek, 15.5 mi southeast of St. Xavier, and at mile 86.6.

DRAINAGE AREA.--19,626 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1965 to current year (monthend contents only). Prior to October 1969, published as "Yellowtail Reservoir." Records of daily elevations and contents on file in the Montana district office.

GAGE.--Water-stage recorder in powerhouse control room. Datum of gage is referenced to National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Reservoir is formed by thin concrete-arch dam; construction began in 1961; completed in 1967. Storage began Nov. 3, 1965. Usable capacity, 1,356,000 acre-ft between elevation 3,296.50 ft, river outlet invert, and 3,657.00 ft, top of flood control. Elevation of spillway crest, 3,593.00 ft. Normal maximum operating level, 1,097,000 acre-ft, elevation, 3,640.00 ft. Minimum operating level, 483,400 acre-ft, elevation, 3,547.00 ft. Dead storage, 16,010 acre-ft, below elevation 3,296.50 ft. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.

COOPERATION.--Elevations and capacity table furnished by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,346,000 acre-ft, July 6, 1967, elevation, 3,656.43 ft; minimum since first filling, 660,700 acre-ft, Mar. 11, 1970, elevation 3,584.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,025,000 acre-ft, Oct. 3, 5, elevation, 3,637.66 ft; minimum, 781,300 acre-ft, Apr. 19, elevation, 3,609.05 ft.

## MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| Date                  | Elevation<br>(feet) | Contents<br>(acre-feet) | Change in contents<br>(acre-feet) |
|-----------------------|---------------------|-------------------------|-----------------------------------|
| Sept. 30 . . . . .    | 3,637.60            | 1,025,000               | ---                               |
| Oct. 31 . . . . .     | 3,634.74            | 992,200                 | -32,800                           |
| Nov. 30 . . . . .     | 3,630.10            | 944,500                 | -47,700                           |
| Dec. 31 . . . . .     | 3,621.71            | 871,000                 | -73,500                           |
| CAL YR 1986 . . . . . |                     |                         | +144,700                          |
| Jan. 31 . . . . .     | 3,614.79            | 819,200                 | -51,800                           |
| Feb. 28 . . . . .     | 3,613.76            | 812,200                 | -7,200                            |
| Mar. 31 . . . . .     | 3,613.05            | 807,200                 | -4,800                            |
| Apr. 30 . . . . .     | 3,610.94            | 793,200                 | -14,000                           |
| May 31 . . . . .      | 3,620.10            | 858,300                 | +65,100                           |
| June 30 . . . . .     | 3,628.31            | 927,600                 | +69,300                           |
| July 31 . . . . .     | 3,625.44            | 901,900                 | -25,700                           |
| Aug. 31 . . . . .     | 3,624.71            | 895,700                 | - 6,200                           |
| Sept. 30 . . . . .    | 3,628.96            | 933,600                 | +37,900                           |
| WTR YR 1987 . . . . . |                     |                         | -91,400                           |



LOCATION.--Lat 45°19'00", long 107°55'05", in NW1/4 NW1/4 NE1/4 sec.16, T.6 S., R.31 E., Big Horn County, Hydrologic Unit 10080015, on right bank 800 ft downstream from Yellowtail afterbay dam, 1,500 ft downstream from Lime Kiln Creek, 14 mi southwest of St. Xavier, and at mile 83.9.

PERIOD OF RECORD.--October 1934 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,158.38 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Apr. 16, 1963, and June 13, 1964, to Mar. 31, 1965, water-stage recorder at site 1.2 mi upstream at different datum. Apr. 1, 1965, to July 31, 1966, water-stage recorder at site 1.300 ft downstream at present datum.

REMARKS.--No estimated daily discharges during year. Records good. Figures of discharge given herein are sum of river flow and flow of Bighorn Canal. Some regulation by 14 reservoirs in Wyoming with combined capacity of 1,400,000 acre-ft and complete regulation by Bighorn Lake (see preceding page) since Nov. 3, 1965. Diversions for irrigation of about 375,000 acres upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,400 ft<sup>3</sup>/s, June 16, 1935; minimum observed, 49 ft<sup>3</sup>/s, Mar. 29, 1966, result of discharge measurement (dam closure); minimum daily, 112 ft<sup>3</sup>/s, Apr. 2, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,650 ft<sup>3</sup>/s, Mar. 29; minimum daily, 1,360 ft<sup>3</sup>/s, Oct. 16.

| DAY   | OCT    | NOV    | DEC    | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 3930   | 3960   | 3790   | 3230  | 2890  | 2850  | 3920  | 2800  | 2250  | 3220  | 2460  | 2240  |
| 2     | 3940   | 3960   | 3800   | 3220  | 2890  | 2850  | 3930  | 2780  | 2290  | 3220  | 2460  | 2230  |
| 3     | 3960   | 3960   | 3790   | 3220  | 2890  | 2850  | 3920  | 2770  | 2340  | 3240  | 2470  | 2220  |
| 4     | 3970   | 3970   | 3790   | 3230  | 2890  | 2840  | 3920  | 2770  | 2730  | 3230  | 2480  | 2200  |
| 5     | 3980   | 3970   | 3810   | 3230  | 2880  | 2840  | 3890  | 2760  | 2760  | 3240  | 2480  | 2180  |
| 6     | 4000   | 3970   | 3800   | 3220  | 2870  | 2840  | 3910  | 2750  | 2750  | 3260  | 2480  | 2180  |
| 7     | 4020   | 3970   | 3800   | 3230  | 2870  | 2840  | 3910  | 2770  | 2760  | 3250  | 2470  | 2170  |
| 8     | 4030   | 3970   | 3810   | 3230  | 2880  | 2830  | 3910  | 2770  | 2780  | 3250  | 2440  | 2130  |
| 9     | 4050   | 3970   | 3820   | 3230  | 2880  | 2830  | 3900  | 2750  | 2800  | 3250  | 2440  | 2050  |
| 10    | 4060   | 3970   | 3810   | 3230  | 2870  | 2890  | 2950  | 2740  | 2790  | 3160  | 2420  | 2050  |
| 11    | 4080   | 3970   | 3820   | 3230  | 2880  | 2950  | 2900  | 2710  | 2800  | 3040  | 2430  | 2040  |
| 12    | 4090   | 3970   | 3810   | 3220  | 2860  | 2950  | 2890  | 2710  | 2800  | 3050  | 2410  | 2030  |
| 13    | 4110   | 3970   | 3810   | 3210  | 2860  | 2950  | 2880  | 2710  | 3100  | 3070  | 2400  | 2020  |
| 14    | 4130   | 3970   | 3810   | 3210  | 2860  | 2940  | 2860  | 2720  | 3110  | 2580  | 2390  | 2010  |
| 15    | 3040   | 3980   | 3810   | 2940  | 2860  | 2940  | 2860  | 2680  | 3130  | 2570  | 2380  | 2010  |
| 16    | 1360   | 3990   | 3810   | 2930  | 2860  | 2940  | 2860  | 2700  | 3160  | 2550  | 2370  | 1990  |
| 17    | 4170   | 3990   | 3810   | 2930  | 2860  | 2940  | 2870  | 2690  | 3140  | 2550  | 2360  | 1980  |
| 18    | 4360   | 3990   | 3830   | 2920  | 2850  | 2940  | 2850  | 2700  | 3140  | 2380  | 2340  | 1980  |
| 19    | 4360   | 3990   | 3530   | 2920  | 2850  | 2940  | 2850  | 2670  | 3160  | 2380  | 2340  | 1960  |
| 20    | 4350   | 3980   | 3520   | 2910  | 2850  | 2940  | 2850  | 2670  | 3160  | 2380  | 2330  | 1950  |
| 21    | 4360   | 3980   | 3510   | 2920  | 2850  | 2940  | 2840  | 2500  | 3170  | 2390  | 2410  | 1940  |
| 22    | 4370   | 3990   | 3510   | 2920  | 2860  | 2940  | 2840  | 2410  | 3160  | 2400  | 2400  | 1930  |
| 23    | 4370   | 3990   | 3510   | 2920  | 2850  | 2940  | 2830  | 2320  | 3170  | 2390  | 2390  | 1920  |
| 24    | 4370   | 3990   | 3520   | 2900  | 2840  | 2950  | 2850  | 2310  | 3170  | 2400  | 2390  | 1910  |
| 25    | 3950   | 3790   | 3510   | 2900  | 2840  | 2930  | 2840  | 2310  | 3180  | 2410  | 2350  | 1900  |
| 26    | 3950   | 3780   | 3520   | 2900  | 2840  | 2920  | 2830  | 2310  | 3190  | 2410  | 2290  | 1890  |
| 27    | 3960   | 3780   | 3520   | 2900  | 2830  | 3870  | 2840  | 2280  | 3210  | 2430  | 2280  | 1870  |
| 28    | 3950   | 3790   | 3530   | 2910  | 2840  | 3930  | 2820  | 2270  | 3210  | 2440  | 2270  | 1850  |
| 29    | 3950   | 3790   | 3530   | 2900  | ---   | 3930  | 2810  | 2260  | 3210  | 2450  | 2260  | 1840  |
| 30    | 3960   | 3790   | 3520   | 2900  | ---   | 3920  | 2800  | 2250  | 3210  | 2440  | 2250  | 1830  |
| 31    | 3960   | ---    | 3530   | 2890  | ---   | 3920  | ---   | 2260  | ---   | 2450  | 2240  | ---   |
| TOTAL | 123140 | 118140 | 114290 | 94650 | 80150 | 95080 | 95130 | 80100 | 88830 | 85480 | 73880 | 60500 |
| MEAN  | 3972   | 3938   | 3687   | 3053  | 2862  | 3067  | 3171  | 2584  | 2961  | 2757  | 2383  | 2017  |
| MAX   | 4370   | 3990   | 3830   | 3230  | 2890  | 3930  | 3930  | 2800  | 3210  | 3260  | 2480  |       |

## 06288600 LITTLE BIGHORN RIVER BELOW DAYTON GULCH, NEAR BURGESS JUNCTION, WY

LOCATION.--Lat 44°50'23", long 107°45'18", in SW1/4 SE1/4 SW1/4 sec.12, T.56 N., R.91 W., Sheridan County, Hydrologic Unit 10080016, Big Horn National Forest, on left bank 150 ft downstream from Dayton Gulch and 12 mi northwest of Burgess Junction.

DRAINAGE AREA.--15.9 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to September 1987 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 8,240 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 10-29, 31, Nov. 1-12, 18, 22, 23, 26, 27, Dec. 17-23, 25, 26, 28-31, Jan. 19, 29, 30, Feb. 1, 2, 25, 26, Mar. 18-23, 25-29, and Apr. 3-10, 12-14, 20, 21. Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

AVERAGE OF DISCHARGE.--5 years, 17.1 ft<sup>3</sup>/s, 12,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 373 ft<sup>3</sup>/s, June 2, 1986, gage height, 3.63 ft; minimum daily, 2.3 ft<sup>3</sup>/s, Mar. 27, 1985.

Peak discharges for water years 1983-86 greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

| Date          | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage Height<br>(ft) | Date         | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage Height<br>(ft) |
|---------------|------|-----------------------------------|---------------------|--------------|------|-----------------------------------|---------------------|
| May 28, 1983  | 1900 | 154                               | 2.61                | May 8, 1985  | 1800 | *114                              | *2.33               |
| June 3, 1983  | 1830 | 147                               | 2.56                | May 24, 1985 | 1800 | 101                               | 2.21                |
| June 11, 1983 | 2130 | *368                              | *3.61               |              |      |                                   |                     |
| May 20, 1984  | 1930 | 127                               | 2.39                | June 2, 1986 | 1700 | *373                              | *3.63               |
| May 31, 1984  | 1830 | 302                               | 3.31                |              |      |                                   |                     |
| June 15, 1984 | 1700 | *329                              | *3.42               |              |      |                                   |                     |

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage Height<br>(ft) | Date  | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage Height<br>(ft) |
|---------|------|-----------------------------------|---------------------|-------|------|-----------------------------------|---------------------|
| Apr. 30 | 1830 | *173                              | *2.72               | May 7 | 1930 | 130                               | 2.45                |

Minimum daily discharge, 2.6 ft<sup>3</sup>/s, Mar. 27, Apr. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB  | MAR  | APR   | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|--------|-------|-------|------|------|-------|------|------|-------|-------|-------|
| 1           | 8.4   | 6.8    | 5.3   | 4.5   | 3.6  | 3.3  | 2.7   | 102  | 54   | 18    | 11    | 7.5   |
| 2           | 10    | 6.4    | 5.3   | 4.6   | 3.5  | 3.2  | 2.7   | 69   | 48   | 18    | 10    | 7.5   |
| 3           | 8.1   | 6.6    | 5.2   | 4.6   | 3.5  | 3.1  | 2.6   | 44   | 44   | 17    | 10    | 7.4   |
| 4           | 8.4   | 6.6    | 5.3   | 4.6   | 3.5  | 3.1  | 3.0   | 46   | 42   | 17    | 10    | 8.3   |
| 5           | 8.2   | 6.2    | 5.3   | 4.3   | 3.4  | 3.2  | 3.3   | 67   | 39   | 16    | 9.9   | 9.1   |
| 6           | 8.2   | 5.8    | 5.3   | 4.3   | 3.4  | 3.1  | 3.6   | 81   | 36   | 16    | 9.9   | 7.8   |
| 7           | 8.3   | 5.2    | 5.2   | 4.2   | 3.5  | 3.1  | 3.8   | 79   | 36   | 15    | 10    | 10    |
| 8           | 8.7   | 5.0    | 5.2   | 4.2   | 3.4  | 3.1  | 3.7   | 75   | 40   | 15    | 10    | 8.1   |
| 9           | 8.5   | 5.6    | 5.3   | 4.2   | 3.4  | 3.1  | 3.6   | 72   | 41   | 16    | 9.8   | 7.6   |
| 10          | 8.1   | 5.8    | 5.4   | 4.2   | 3.3  | 2.9  | 3.3   | 55   | 38   | 19    | 9.7   | 7.5   |
| 11          | 7.7   | 6.0    | 5.3   | 4.3   | 3.3  | 2.8  | 3.0   | 55   | 33   | 30    | 9.6   | 7.4   |
| 12          | 7.1   | 6.2    | 5.1   | 4.2   | 3.3  | 2.8  | 2.9   | 54   | 31   | 19    | 9.4   | 7.2   |
| 13          | 7.6   | 6.6    | 5.1   | 4.2   | 3.2  | 2.9  | 2.8   | 49   | 29   | 17    | 9.2   | 7.2   |
| 14          | 8.1   | 6.6    | 5.1   | 3.9   | 3.3  | 2.9  | 3.0   | 44   | 28   | 15    | 9.1   | 7.1   |
| 15          | 8.2   | 6.5    | 5.0   | 3.7   | 3.1  | 2.8  | 3.3   | 40   | 28   | 15    | 9.4   | 7.1   |
| 16          | 8.1   | 6.3    | 5.0   | 3.7   | 3.2  | 2.8  | 4.1   | 43   | 27   | 15    | 9.6   | 7.1   |
| 17          | 7.8   | 6.3    | 5.0   | 3.7   | 3.2  | 2.8  | 5.3   | 48   | 26   | 16    | 8.8   | 7.0   |
| 18          | 7.7   | 6.2    | 4.9   | 3.7   | 3.1  | 2.7  | 6.4   | 44   | 25   | 16    | 8.6   | 7.0   |
| 19          | 7.6   | 6.3    | 5.0   | 4.0   | 3.1  | 2.8  | 7.6   | 38   | 27   | 14    | 8.5   | 6.8   |
| 20          | 7.7   | 6.3    | 5.0   | 4.2   | 3.1  | 2.7  | 6.4   | 39   | 24   | 14    | 8.1   | 7.1   |
| 21          | 7.7   | 6.3    | 5.0   | 4.2   | 3.2  | 2.7  | 5.4   | 35   | 23   | 13    | 7.7   | 7.2   |
| 22          | 7.6   | 6.0    | 4.9   | 4.1   | 3.2  | 2.7  | 6.5   | 34   | 25   | 14    | 7.6   | 7.2   |
| 23          | 7.7   | 6.2    | 4.9   | 3.9   | 3.1  | 2.7  | 12    | 31   | 24   | 13    | 7.9   | 7.2   |
| 24          | 7.6   | 6.2    | 4.9   | 3.8   | 3.1  | 2.7  | 22    | 33   | 22   | 13    | 8.1   | 7.1   |
| 25          | 7.6   | 6.1    | 4.9   | 3.7   | 3.1  | 2.7  | 29    | 37   | 21   | 13    | 16    | 7.1   |
| 26          | 7.6   | 6.0    | 4.9   | 3.7   | 3.1  | 2.7  | 48    | 33   | 20   | 13    | 11    | 7.1   |
| 27          | 7.6   | 6.0    | 5.0   | 3.7   | 3.1  | 2.6  | 78    | 36   | 20   | 12    | 8.8   | 7.1   |
| 28          | 7.4   | 5.8    | 4.8   | 3.7   | 3.3  | 2.7  | 85    | 46   | 19   | 13    | 8.2   | 6.9   |
| 29          | 7.2   | 5.6    | 4.8   | 3.7   | ---  | 2.7  | 90    | 50   | 19   | 12    | 7.8   | 6.9   |
| 30          | 7.1   | 5.6    | 4.7   | 3.7   | ---  | 2.8  | 103   | 56   | 18   | 11    | 7.7   | 6.9   |
| 31          | 7.0   | ---    | 4.6   | 3.7   | ---  | 2.8  | ---   | 60   | ---  | 11    | 7.6   | ---   |
| TOTAL       | 244.6 | 183.1  | 156.7 | 125.2 | 91.6 | 89.0 | 556.0 | 1595 | 907  | 476   | 289.0 | 222.5 |
| MEAN        | 7.89  | 6.10   | 5.05  | 4.04  | 3.27 | 2.87 | 18.5  | 51.5 | 30.2 | 15.4  | 9.32  | 7.42  |
| MAX         | 10    | 6.8    | 5.4   | 4.6   | 3.6  | 3.3  | 103   | 102  | 54   | 30    | 16    | 10    |
| MIN         | 7.0   | 5.0    | 4.6   | 3.7   | 3.1  | 2.6  | 2.6   | 31   | 18   | 11    | 7.6   | 6.8   |
| AC-FT       | 485   | 363    | 311   | 248   | 182  | 177  | 1100  | 3160 | 1800 | 944   | 573   | 441   |
| CAL YR 1986 | TOTAL | 7569.4 |       | MEAN  | 20.7 | MAX  | 319   | MIN  | 2.7  | AC-FT | 15010 |       |
| WTR YR 1987 | TOTAL | 4935.7 |       | MEAN  | 13.5 | MAX  | 103   | MIN  | 2.6  | AC-FT | 9790  |       |

## YELLOWSTONE RIVER BASIN

06288700 DRY FORK BELOW LICK CREEK, NEAR BURGESS JUNCTION, WY

LOCATION.--Lat 44°53'06", long 107°36'48", in SW1/4 NW1/4 SE1/4 sec.28, T.57 N., R.89 W., Sheridan County, Hydrologic Unit 10080016, Bighorn National Forest, on left bank 15 ft downstream from Lick Creek, 5.2 mi upstream from mouth, and 9 mi northwest of Burgess Junction.

DRAINAGE AREA.--54.1 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to September 1987 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 6,100 ft above National Geodetic Vertical Datum of 1929, from topographic map. Supplementary gage on right bank 15 ft downstream at datum 0.49 ft higher.

REMARKS.--No estimated daily discharges. Records good. No diversion upstream from station.

AVERAGE DISCHARGE.--5 years, 43.4 ft<sup>3</sup>/s, 31,440 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 429 ft<sup>3</sup>/s, May 31, 1984, gage height, 3.23 ft; minimum daily, 11 ft<sup>3</sup>/s, Nov. 10, 1986.

Peak discharges for water years 1983-86 greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

| Date          | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage Height<br>(ft) | Date         | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage Height<br>(ft) |
|---------------|------|-----------------------------------|---------------------|--------------|------|-----------------------------------|---------------------|
| May 28, 1983  | 2030 | 208                               | 2.29                | May 3, 1985  | 2300 | *102                              | *1.58               |
| June 12, 1983 | 0030 | *325                              | *2.77               |              |      |                                   |                     |
| May 20, 1984  | 2400 | 281                               | a2.12               | May 4, 1986  | 2400 | 101                               | a1.00               |
| May 31, 1984  | 2200 | *429                              | a*2.89              | May 21, 1986 | 2400 | 121                               | a1.15               |
| June 16, 1984 | 0200 | 360                               | a2.55               | June 4, 1986 | 0400 | *296                              | a*2.23              |

a Supplementary gage datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage Height<br>(ft) | Date                                       | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage Height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------------------------------------------|------|-----------------------------------|---------------------|
| Apr. 28 | 1930 | *127                              | *1.74               |                                            |      |                                   |                     |
|         |      |                                   |                     | No other peak greater than base discharge. |      |                                   |                     |

Minimum daily discharge, 11 ft<sup>3</sup>/s, Nov. 10.DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL   | AUG   | SEP  |
|-------------|-------|-------|------|------|------|------|------|------|------|-------|-------|------|
| 1           | 28    | 23    | 23   | 20   | 19   | 18   | 18   | 89   | 67   | 46    | 38    | 28   |
| 2           | 28    | 23    | 23   | 21   | 19   | 18   | 17   | 75   | 64   | 46    | 37    | 28   |
| 3           | 28    | 26    | 19   | 21   | 19   | 18   | 18   | 60   | 62   | 45    | 37    | 28   |
| 4           | 28    | 25    | 19   | 21   | 19   | 18   | 19   | 57   | 61   | 45    | 36    | 31   |
| 5           | 30    | 25    | 25   | 20   | 19   | 19   | 19   | 60   | 62   | 45    | 35    | 30   |
| 6           | 28    | 21    | 24   | 20   | 18   | 18   | 21   | 63   | 61   | 44    | 35    | 28   |
| 7           | 27    | 22    | 23   | 20   | 18   | 18   | 21   | 68   | 60   | 44    | 36    | 33   |
| 8           | 27    | 19    | 23   | 19   | 18   | 18   | 22   | 71   | 63   | 44    | 35    | 29   |
| 9           | 27    | 13    | 19   | 19   | 18   | 18   | 21   | 71   | 64   | 44    | 34    | 28   |
| 10          | 26    | 11    | 20   | 20   | 18   | 18   | 20   | 68   | 62   | 45    | 34    | 28   |
| 11          | 25    | 22    | 24   | 21   | 18   | 18   | 20   | 67   | 59   | 54    | 34    | 27   |
| 12          | 23    | 20    | 23   | 20   | 18   | 17   | 19   | 68   | 59   | 46    | 34    | 27   |
| 13          | 27    | 25    | 22   | 20   | 18   | 18   | 19   | 67   | 58   | 44    | 34    | 26   |
| 14          | 28    | 27    | 22   | 20   | 19   | 18   | 19   | 65   | 59   | 43    | 34    | 26   |
| 15          | 27    | 27    | 22   | 16   | 19   | 18   | 21   | 63   | 57   | 42    | 33    | 26   |
| 16          | 27    | 29    | 22   | 16   | 18   | 18   | 24   | 64   | 57   | 43    | 33    | 26   |
| 17          | 26    | 29    | 20   | 21   | 18   | 18   | 28   | 70   | 56   | 43    | 32    | 26   |
| 18          | 26    | 26    | 21   | 23   | 19   | 17   | 33   | 65   | 55   | 42    | 32    | 26   |
| 19          | 26    | 25    | 22   | 21   | 19   | 18   | 34   | 64   | 56   | 41    | 31    | 26   |
| 20          | 26    | 25    | 23   | 20   | 17   | 17   | 29   | 64   | 54   | 40    | 31    | 26   |
| 21          | 26    | 25    | 21   | 20   | 19   | 17   | 27   | 60   | 53   | 40    | 31    | 25   |
| 22          | 26    | 24    | 22   | 20   | 19   | 17   | 31   | 58   | 53   | 41    | 31    | 25   |
| 23          | 26    | 24    | 22   | 20   | 19   | 17   | 38   | 58   | 52   | 39    | 31    | 25   |
| 24          | 26    | 24    | 22   | 20   | 18   | 18   | 48   | 59   | 51   | 38    | 32    | 25   |
| 25          | 26    | 24    | 22   | 20   | 18   | 17   | 59   | 59   | 50   | 38    | 39    | 25   |
| 26          | 26    | 23    | 22   | 19   | 17   | 18   | 72   | 58   | 49   | 38    | 34    | 25   |
| 27          | 26    | 24    | 22   | 19   | 20   | 16   | 83   | 64   | 48   | 42    | 31    | 25   |
| 28          | 26    | 24    | 21   | 19   | 18   | 15   | 88   | 65   | 48   | 40    | 30    | 25   |
| 29          | 25    | 24    | 21   | 19   | ---  | 13   | 89   | 67   | 47   | 39    | 29    | 24   |
| 30          | 26    | 23    | 21   | 19   | ---  | 18   | 90   | 66   | 46   | 39    | 29    | 24   |
| 31          | 25    | ---   | 20   | 20   | ---  | 19   | ---  | 68   | ---  | 39    | 28    | ---  |
| TOTAL       | 822   | 702   | 675  | 614  | 516  | 543  | 1067 | 2021 | 1693 | 1319  | 1030  | 801  |
| MEAN        | 26.5  | 23.4  | 21.8 | 19.8 | 18.4 | 17.5 | 35.6 | 65.2 | 56.4 | 42.5  | 33.2  | 26.7 |
| MAX         | 30    | 29    | 25   | 23   | 20   | 19   | 90   | 89   | 67   | 54    | 39    | 33   |
| MIN         | 23    | 11    | 19   | 16   | 17   | 13   | 17   | 57   | 46   | 38    | 28    | 24   |
| AC-FT       | 1630  | 1390  | 1340 | 1220 | 1020 | 1080 | 2120 | 4010 | 3360 | 2620  | 2040  | 1590 |
| CAL YR 1986 | TOTAL | 16461 |      | MEAN | 45.1 | MAX  | 276  | MIN  | 11   | AC-FT | 32650 |      |
| WTR YR 1987 | TOTAL | 11803 |      | MEAN | 32.3 | MAX  | 90   | MIN  | 11   | AC-FT | 23410 |      |

06288975 ELKHORN CREEK ABOVE FULLER RANCH DITCH, NEAR PARKMAN, WY

LOCATION.--Lat 44°59'01", long 107°36'53", in SE1/4 NE1/4 SW1/4 sec.21, T.58 N., R.89 W., Sheridan County, Hydrologic Unit 10080016, on right bank 68 ft upstream from Fuller Ranch Ditch, 1.5 mi upstream from mouth, and 15 mi west of Parkman.

DRAINAGE AREA.--4.58 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to September 1987 (discontinued). No winter records during 1985.

GAGE.--Water-stage recorder. Elevation of gage is 4,840 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 10-14, Dec. 4, 5, 9-11, Jan. 1, 2, 9-11, 15-19, Feb. 20-28, Mar. 1-4, 27-30, and Apr. 16-28. Records good except those for November to April, which are poor. No diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82 ft<sup>3</sup>/s, May 15, 1984, gage height, 2.40 ft, from floodmarks; maximum gage height, 3.19 ft, Apr. 28, 1984 (backwater from ice); minimum daily discharge, 0.82 ft<sup>3</sup>/s, Nov. 24, 1985.

Peak discharges for water years 1983-86 greater than base discharge of 8.0 ft<sup>3</sup>/s and maximum (\*):

| Date          | Time  | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                        | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------------|-------|-----------------------------------|---------------------|---------------------------------------------|------|-----------------------------------|---------------------|
| May 29, 1983  | 0700  | *18                               | *1.47               | No peak greater than base discharge in 1985 |      |                                   |                     |
| June 6, 1983  | 1230  | 13                                | 1.37                |                                             |      |                                   |                     |
| Apr. 19, 1984 | 1700  | 8.6                               | 1.22                | May 22, 1986                                | 1600 | 10                                | 1.27                |
| May 15, 1984  | b2000 | *82                               | c*2.40              | June 4, 1986                                | 1400 | 15                                | 1.41                |
| May 31, 1984  | 0500  | 30                                | 1.74                | June 10, 1986                               | 0030 | *23                               | *1.59               |
| June 15, 1984 | 2400  | 22                                | 1.56                |                                             |      |                                   |                     |

b About.

c From floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8.0 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time    | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|---------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Apr. 18 | unknown | 8.6                               | a1.23               | May 28 | 0430 | *12                               | *1.35               |
| Apr. 30 | 1100    | 9.5                               | 1.25                |        |      |                                   |                     |

a From recorded range-in-stage.

Minimum daily discharge, 1.1 ft<sup>3</sup>/s, Nov. 10, Jan. 16, Feb. 26, 27.

06288975 ELKHORN CREEK ABOVE FULLER RANCH DITCH, NEAR PARKMAN, WY--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL   | AUG  | SEP  |
|-------------|-------|--------|------|------|------|------|-------|-------|-------|-------|------|------|
| 1           | 1.5   | 1.6    | 1.6  | 1.2  | 1.2  | 1.3  | 1.6   | 9.8   | 7.7   | 2.7   | 2.1  | 1.7  |
| 2           | 1.6   | 1.6    | 1.6  | 1.3  | 1.3  | 1.4  | 1.6   | 9.5   | 6.7   | 2.6   | 2.1  | 1.7  |
| 3           | 1.6   | 1.6    | 1.6  | 1.4  | 1.3  | 1.4  | 1.6   | 8.3   | 6.2   | 2.7   | 2.1  | 1.7  |
| 4           | 1.6   | 1.6    | 1.5  | 1.4  | 1.3  | 1.4  | 1.7   | 7.0   | 5.8   | 2.7   | 2.1  | 1.9  |
| 5           | 2.1   | 1.6    | 1.6  | 1.4  | 1.3  | 1.4  | 1.9   | 6.2   | 5.5   | 2.7   | 2.1  | 2.1  |
| 6           | 1.9   | 1.6    | 1.6  | 1.4  | 1.3  | 1.4  | 2.1   | 5.8   | 5.5   | 2.7   | 2.1  | 1.8  |
| 7           | 1.8   | 1.7    | 1.6  | 1.4  | 1.3  | 1.4  | 2.4   | 6.0   | 5.1   | 2.6   | 2.1  | 2.4  |
| 8           | 1.8   | 1.6    | 1.6  | 1.4  | 1.3  | 1.4  | 2.7   | 6.2   | 4.9   | 2.4   | 2.1  | 2.2  |
| 9           | 1.9   | 1.4    | 1.5  | 1.3  | 1.3  | 1.4  | 3.0   | 7.0   | 4.7   | 2.6   | 1.8  | 2.1  |
| 10          | 1.9   | 1.1    | 1.3  | 1.3  | 1.3  | 1.4  | 3.0   | 7.5   | 4.5   | 2.6   | 1.8  | 2.1  |
| 11          | 1.8   | 1.2    | 1.5  | 1.4  | 1.3  | 1.4  | 3.0   | 7.2   | 4.1   | 4.1   | 1.8  | 2.1  |
| 12          | 1.7   | 1.4    | 1.6  | 1.4  | 1.3  | 1.4  | 3.0   | 6.6   | 3.9   | 3.1   | 1.8  | 2.1  |
| 13          | 1.7   | 1.5    | 1.6  | 1.4  | 1.2  | 1.4  | 2.8   | 6.2   | 3.8   | 2.8   | 1.8  | 2.1  |
| 14          | 1.7   | 1.5    | 1.6  | 1.3  | 1.2  | 1.4  | 2.8   | 5.8   | 3.8   | 2.7   | 1.8  | 1.9  |
| 15          | 1.7   | 1.5    | 1.5  | 1.2  | 1.2  | 1.4  | 2.8   | 5.5   | 3.8   | 2.6   | 1.8  | 2.0  |
| 16          | 1.7   | 1.5    | 1.5  | 1.1  | 1.2  | 1.4  | 3.2   | 5.3   | 3.6   | 2.6   | 1.8  | 2.1  |
| 17          | 1.7   | 1.5    | 1.5  | 1.2  | 1.2  | 1.4  | 6.6   | 5.2   | 3.4   | 2.6   | 1.7  | 1.9  |
| 18          | 1.7   | 1.5    | 1.5  | 1.2  | 1.2  | 1.4  | 8.6   | 4.9   | 3.3   | 2.4   | 1.7  | 1.9  |
| 19          | 1.7   | 1.5    | 1.5  | 1.3  | 1.2  | 1.4  | 8.0   | 4.7   | 3.4   | 2.4   | 1.7  | 1.9  |
| 20          | 1.7   | 1.4    | 1.4  | 1.3  | 1.2  | 1.4  | 6.8   | 4.5   | 3.3   | 2.3   | 1.7  | 1.9  |
| 21          | 1.7   | 1.4    | 1.4  | 1.3  | 1.2  | 1.4  | 5.4   | 4.3   | 3.3   | 2.3   | 1.7  | 1.8  |
| 22          | 1.7   | 1.4    | 1.4  | 1.2  | 1.2  | 1.6  | 4.8   | 4.1   | 3.1   | 2.2   | 1.7  | 1.8  |
| 23          | 1.7   | 1.4    | 1.4  | 1.2  | 1.2  | 1.5  | 5.0   | 3.9   | 3.1   | 2.1   | 1.7  | 1.8  |
| 24          | 1.7   | 1.4    | 1.4  | 1.2  | 1.2  | 1.4  | 5.2   | 3.8   | 2.8   | 1.9   | 1.7  | 1.8  |
| 25          | 1.7   | 1.5    | 1.4  | 1.2  | 1.2  | 1.4  | 5.6   | 3.8   | 2.7   | 1.9   | 2.4  | 1.8  |
| 26          | 1.7   | 1.5    | 1.4  | 1.2  | 1.1  | 1.5  | 6.8   | 4.5   | 2.7   | 1.9   | 3.0  | 1.9  |
| 27          | 1.7   | 1.5    | 1.4  | 1.2  | 1.1  | 1.3  | 7.6   | 7.8   | 2.7   | 2.1   | 2.3  | 1.9  |
| 28          | 1.7   | 1.5    | 1.4  | 1.3  | 1.2  | 1.2  | 8.5   | 12    | 2.7   | 2.1   | 2.2  | 1.9  |
| 29          | 1.7   | 1.5    | 1.4  | 1.3  | ---  | 1.6  | 8.9   | 10    | 2.7   | 2.2   | 2.1  | 1.9  |
| 30          | 1.6   | 1.5    | 1.4  | 1.2  | ---  | 1.9  | 9.2   | 9.2   | 2.7   | 2.2   | 1.9  | 1.9  |
| 31          | 1.6   | ---    | 1.4  | 1.2  | ---  | 2.1  | ---   | 8.9   | ---   | 2.2   | 1.7  | ---  |
| TOTAL       | 53.3  | 44.5   | 46.1 | 39.8 | 34.5 | 44.8 | 136.2 | 201.5 | 121.5 | 77.0  | 60.4 | 58.1 |
| MEAN        | 1.72  | 1.48   | 1.49 | 1.28 | 1.23 | 1.45 | 4.54  | 6.50  | 4.05  | 2.48  | 1.95 | 1.94 |
| MAX         | 2.1   | 1.7    | 1.6  | 1.4  | 1.3  | 2.1  | 9.2   | 12    | 7.7   | 4.1   | 3.0  | 2.4  |
| MIN         | 1.5   | 1.1    | 1.3  | 1.1  | 1.1  | 1.2  | 1.6   | 3.8   | 2.7   | 1.9   | 1.7  | 1.7  |
| AC-FT       | 106   | 88     | 91   | 79   | 68   | 89   | 270   | 400   | 241   | 153   | 120  | 115  |
| CAL YR 1986 | TOTAL | 928.70 |      | MEAN | 2.54 | MAX  | 21    | MIN   | .92   | AC-FT | 1840 |      |
| WTR YR 1987 | TOTAL | 917.7  |      | MEAN | 2.51 | MAX  | 12    | MIN   | 1.1   | AC-FT | 1820 |      |

## 06288990 WEST FORK LITTLE BIGHORN RIVER NEAR PARKMAN, WY

LOCATION.--Lat 44°59'54", long 107°37'58", in SW1/4 NW1/4 SE1/4 sec.17, T.58 N., R.89 W., Sheridan County, Hydrologic Unit 10080016, on right bank 0.3 mi upstream from mouth and 16 mi west of Parkman.

DRAINAGE AREA.--38.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1969 to September 1972, October 1982 to September 1987, discontinued (no winter record during 1987).

GAGE.--Water-stage recorder. Elevation of gage is 4,430 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1969 to September 1972, at site 0.2 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Apr. 1, 11, 19. Records good except those for April, which are fair. No diversions upstream from station.

AVERAGE DISCHARGE.--7 years (water years 1970-72, 1983-86), 29.0 ft<sup>3</sup>/s, 21,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.-- Maximum discharge observed, 395 ft<sup>3</sup>/s, June 10, 1970, gage height, 2.65 ft, site and datum then in use; maximum gage height recorded, 3.09 ft (backwater from ice, site and datum then in use) from recorded range in stage, during period Dec. 26, 1971 to Jan. 11, 1972, but may have been higher during periods of no gage-height record; minimum daily discharge, 6.0 ft<sup>3</sup>/s, Jan. 5, 1970, Feb. 8, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base of 210 ft<sup>3</sup>/s and maximum (\*):

| Date  | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                 | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|-------|------|-----------------------------------|---------------------|--------------------------------------|------|-----------------------------------|---------------------|
| May 2 | 0130 | *66                               | *1.77               | No peak greater than base discharge. |      |                                   |                     |

Minimum daily discharge during period of operation, 10 ft<sup>3</sup>/s, Apr. 1-3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT  | NOV | DEC | JAN | FEB | MAR | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|------|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| 1     | 15   |     |     |     |     |     | 10   | 62   | 50   | 20   | 16   | 13   |
| 2     | 15   |     |     |     |     |     | 10   | 62   | 47   | 20   | 16   | 13   |
| 3     | 15   |     |     |     |     |     | 10   | 49   | 43   | 19   | 16   | 13   |
| 4     | 14   |     |     |     |     |     | 11   | 42   | 39   | 19   | 16   | 14   |
| 5     | 16   |     |     |     |     |     | 13   | 43   | 37   | 19   | 15   | 15   |
| 6     | 15   |     |     |     |     |     | 13   | 45   | 36   | 19   | 15   | 14   |
| 7     | 15   |     |     |     |     |     | 13   | 48   | 34   | 18   | 16   | 16   |
| 8     | 14   |     |     |     |     |     | 14   | 50   | 32   | 18   | 16   | 15   |
| 9     | 14   |     |     |     |     |     | 14   | 52   | 31   | 18   | 16   | 14   |
| 10    | 13   |     |     |     |     |     | 13   | 51   | 32   | 19   | 16   | 14   |
| 11    | 13   |     |     |     |     |     | 13   | 48   | 30   | 25   | 16   | 13   |
| 12    | 13   |     |     |     |     |     | 12   | 45   | 29   | 21   | 16   | 13   |
| 13    | 14   |     |     |     |     |     | 12   | 45   | 28   | 20   | 16   | 14   |
| 14    | 14   |     |     |     |     |     | 12   | 43   | 27   | 19   | 16   | 14   |
| 15    | 14   |     |     |     |     |     | 13   | 41   | 27   | 18   | 15   | 13   |
| 16    | 14   |     |     |     |     |     | 14   | 40   | 26   | 18   | 15   | 13   |
| 17    | 14   |     |     |     |     |     | 16   | 39   | 25   | 18   | 14   | 13   |
| 18    | 14   |     |     |     |     |     | 19   | 38   | 24   | 18   | 14   | 13   |
| 19    | 13   |     |     |     |     |     | 19   | 36   | 25   | 18   | 14   | 13   |
| 20    | 13   |     |     |     |     |     | 18   | 35   | 23   | 17   | 14   | 13   |
| 21    | 13   |     |     |     |     |     | 16   | 33   | 23   | 17   | 14   | 13   |
| 22    | 13   |     |     |     |     |     | 17   | 30   | 22   | 18   | 14   | 13   |
| 23    | 13   |     |     |     |     |     | 18   | 29   | 22   | 17   | 13   | 13   |
| 24    | 13   |     |     |     |     |     | 22   | 28   | 21   | 17   | 13   | 12   |
| 25    | 13   |     |     |     |     |     | 29   | 27   | 20   | 16   | 16   | 12   |
| 26    | 13   |     |     |     |     |     | 36   | 27   | 20   | 16   | 15   | 12   |
| 27    | 13   |     |     |     |     |     | 41   | 35   | 20   | 17   | 14   | 12   |
| 28    | 13   |     |     |     |     |     | 50   | 34   | 20   | 16   | 14   | 12   |
| 29    | 13   |     |     |     |     |     | 53   | 39   | 20   | 16   | 14   | 12   |
| 30    | 13   |     |     |     |     |     | 54   | 44   | 20   | 16   | 14   | 12   |
| 31    | 13   |     |     |     |     |     | ---  | 49   | ---  | 16   | 14   | ---  |
| TOTAL | 425  |     |     |     |     |     | 605  | 1289 | 853  | 563  | 463  | 396  |
| MEAN  | 13.7 |     |     |     |     |     | 20.2 | 41.6 | 28.4 | 18.2 | 14.9 | 13.2 |
| MAX   | 16   |     |     |     |     |     | 54   | 62   | 50   | 25   | 16   | 16   |
| MIN   | 13   |     |     |     |     |     | 10   | 27   | 20   | 16   | 13   | 12   |
| AC-FT | 843  |     |     |     |     |     | 1200 | 2560 | 1690 | 1120 | 918  | 785  |



## YELLOWSTONE RIVER BASIN

06289000 LITTLE BIGHORN RIVER AT STATE LINE, NEAR WYOLA, MT

LOCATION.--Lat 45°00'25", long 107°36'52", in SW1/4 NW1/4 sec.36, T.9 S., R.33 E., Bighorn County, Hydrologic Unit 10080016, on right bank 20 ft downstream from county bridge, 0.5 mi north of Wyoming-Montana State line, 1 mi downstream from West Fork, 13 mi southwest of Wyola, and at mile 115.2.

DRAINAGE AREA.--193 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1939 to current year. Prior to October 1940, published as Little Horn River at State Line, near Wyola.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,350 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges this year. Records good. Diversions for irrigation of 163 acres upstream from station.

AVERAGE DISCHARGE.--48 years, 153 ft<sup>3</sup>/s, 110,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,730 ft<sup>3</sup>/s, June 3, 1944, gage height, 4.87 ft, from rating curve extended above 1,400 ft<sup>3</sup>/s; maximum gage height recorded, 5.93 ft, June 9, 1944 (log jam); minimum discharge, 19 ft<sup>3</sup>/s, Mar. 29, 1987, result of ice jam upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 510 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                       | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------------------------------------------|------|-----------------------------------|---------------------|
| Apr. 30 | 2100 | *546                              | *2.61               | No other peak greater than base discharge. |      |                                   |                     |

Minimum discharge, 19 ft<sup>3</sup>/s, Mar. 29, result of ice jam upstream.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|------|------|------|------|------|------|-------|-------|------|------|------|
| 1     | 83   | 66   | 62   | 60   | 59   | 57   | 57   | 429   | 312   | 136  | 93   | 75   |
| 2     | 88   | 65   | 65   | 60   | 58   | 56   | 54   | 378   | 283   | 138  | 91   | 75   |
| 3     | 82   | 74   | 55   | 60   | 58   | 55   | 55   | 277   | 267   | 131  | 90   | 76   |
| 4     | 81   | 69   | 65   | 63   | 58   | 55   | 56   | 255   | 257   | 129  | 90   | 83   |
| 5     | 87   | 69   | 66   | 63   | 57   | 56   | 59   | 280   | 249   | 130  | 88   | 88   |
| 6     | 82   | 69   | 62   | 63   | 57   | 57   | 63   | 311   | 242   | 124  | 88   | 79   |
| 7     | 82   | 63   | 63   | 60   | 57   | 57   | 68   | 324   | 234   | 123  | 91   | 98   |
| 8     | 81   | 64   | 70   | 54   | 57   | 57   | 70   | 325   | 243   | 117  | 91   | 83   |
| 9     | 79   | 51   | 64   | 52   | 57   | 55   | 68   | 323   | 244   | 120  | 88   | 79   |
| 10    | 81   | 32   | 63   | 60   | 57   | 55   | 64   | 306   | 251   | 127  | 85   | 78   |
| 11    | 73   | 60   | 62   | 72   | 57   | 54   | 65   | 291   | 229   | 193  | 86   | 77   |
| 12    | 68   | 47   | 60   | 65   | 57   | 54   | 63   | 288   | 216   | 148  | 87   | 76   |
| 13    | 80   | 68   | 60   | 65   | 57   | 55   | 60   | 283   | 208   | 127  | 85   | 76   |
| 14    | 80   | 86   | 57   | 62   | 58   | 56   | 61   | 268   | 204   | 120  | 85   | 74   |
| 15    | 78   | 78   | 55   | 43   | 57   | 56   | 65   | 258   | 200   | 115  | 85   | 74   |
| 16    | 78   | 74   | 57   | 36   | 56   | 56   | 77   | 255   | 195   | 114  | 88   | 75   |
| 17    | 76   | 73   | 62   | 62   | 56   | 55   | 92   | 305   | 190   | 119  | 82   | 75   |
| 18    | 76   | 69   | 59   | 69   | 56   | 55   | 111  | 265   | 185   | 120  | 81   | 74   |
| 19    | 74   | 69   | 62   | 66   | 56   | 56   | 122  | 253   | 194   | 112  | 80   | 73   |
| 20    | 73   | 68   | 62   | 63   | 53   | 55   | 98   | 257   | 186   | 107  | 78   | 72   |
| 21    | 74   | 68   | 60   | 65   | 56   | 55   | 89   | 239   | 178   | 107  | 77   | 71   |
| 22    | 74   | 66   | 60   | 60   | 55   | 53   | 99   | 227   | 173   | 111  | 77   | 71   |
| 23    | 74   | 65   | 59   | 63   | 56   | 53   | 131  | 218   | 186   | 105  | 78   | 70   |
| 24    | 73   | 66   | 59   | 64   | 54   | 54   | 172  | 215   | 168   | 101  | 81   | 70   |
| 25    | 73   | 66   | 58   | 62   | 51   | 52   | 215  | 231   | 158   | 99   | 113  | 71   |
| 26    | 71   | 62   | 60   | 60   | 44   | 53   | 266  | 219   | 152   | 98   | 103  | 70   |
| 27    | 71   | 65   | 60   | 60   | 55   | 50   | 339  | 264   | 148   | 105  | 86   | 72   |
| 28    | 71   | 63   | 60   | 60   | 54   | 49   | 382  | 289   | 144   | 104  | 81   | 70   |
| 29    | 69   | 65   | 60   | 59   | ---  | 37   | 403  | 313   | 144   | 100  | 78   | 70   |
| 30    | 73   | 65   | 60   | 58   | ---  | 55   | 418  | 308   | 141   | 96   | 77   | 69   |
| 31    | 68   | ---  | 60   | 59   | ---  | 59   | ---  | 316   | ---   | 95   | 76   | ---  |
| TOTAL | 2373 | 1965 | 1887 | 1868 | 1563 | 1682 | 3942 | 8770  | 6181  | 3671 | 2659 | 2264 |
| MEAN  | 76.5 | 65.5 | 60.9 | 60.3 | 55.8 | 54.3 | 131  | 283   | 206   | 118  | 85.8 | 75.5 |
| MAX   | 88   | 86   | 70   | 72   | 59   | 59   | 418  | 429   | 312   | 193  | 113  | 98   |
| MIN   | 68   | 32   | 55   | 36   | 44   | 37   | 54   | 215   | 141   | 95   | 76   | 69   |
| AC-FT | 4710 | 3900 | 3740 | 3710 | 3100 | 3340 | 7820 | 17400 | 12260 | 7280 | 5270 | 4490 |

CAL YR 1986 TOTAL 51626 MEAN 141 MAX 1320 MIN 29 AC-FT 102400  
WTR YR 1987 TOTAL 38825 MEAN 106 MAX 429 MIN 32 AC-FT 77010

06289100 RED CANYON CREEK NEAR PARKMAN, WY

LOCATION.--Lat 44°58'42", long 107°35'09", in NW1/4 NE1/4 NE1/4 sec.27, T.58 N., R.89 W., Sheridan County, Hydrologic Unit 10080016, on right bank 0.2 mi upstream from bridge on county road, 1.7 mi upstream from Fuller Ranch, 2.1 mi upstream from the Wyoming-Montana State line, 2.5 mi upstream from mouth (Powers Upper Ditch), and 13 mi west of Parkman.

DRAINAGE AREA.--3.20 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to current year (no winter records during 1985, 1987).

GAGE.--Water-stage recorder. Elevation of gage is 4,810 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Mar. 1-4, 22, 27-31, and Apr. 1, 2. Records good except those for estimated daily discharges, which are poor. No diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 90 ft<sup>3</sup>/s, May 15, 1984, gage height, 2.45 ft, from floodmarks; minimum daily, 0.14 ft<sup>3</sup>/s, Dec. 19, 28-31, 1985, Jan. 1-7, 16, 17, 1986.

Peak discharges for water years 1983-86 greater than base discharge of 5.0 ft<sup>3</sup>/s and maximum (\*):

| Date          | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                        | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------------|------|-----------------------------------|---------------------|---------------------------------------------|------|-----------------------------------|---------------------|
| Apr. 24, 1983 | 2100 | 9.2                               | 1.65                | No peak greater than base discharge in 1985 |      |                                   |                     |
| May 9, 1983   | 0600 | 6.3                               | 1.57                |                                             |      |                                   |                     |
| May 27, 1983  | 0600 | *12                               | *1.71               |                                             |      |                                   |                     |
| Apr. 20, 1984 | 1530 | 12                                | 1.69                | May 5, 1986                                 | 0600 | 6.6                               | 1.41                |
| May 15, 1984  | 2330 | *90                               | a*2.45              | May 22, 1986                                | 0200 | 6.6                               | 1.41                |
| May 31, 1984  | 0200 | 20                                | 1.69                | June 3, 1986                                | 2400 | 8.6                               | 1.46                |
| June 15, 1984 | 2200 | 14                                | 1.55                | June 9, 1986                                | 2130 | *15                               | *1.59               |

a From floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5.0 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Apr. 18 | 1400 | 9.0                               | 1.48                | May 27 | 2200 | *10                               | *1.50               |
| Apr. 28 | 1600 | 7.4                               | 1.43                |        |      |                                   |                     |

Minimum daily discharge during period of record, 0.31 ft<sup>3</sup>/s, Aug. 23.

## YELLOWSTONE RIVER BASIN

06289100 RED CANYON CREEK NEAR PARKMAN, WY--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV | DEC | JAN | FEB | MAR   | APR    | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-----|-----|-----|-----|-------|--------|-------|-------|-------|-------|-------|
| 1     | .35   |     |     |     |     | .40   | .60    | 6.6   | 5.3   | .64   | .57   | .51   |
| 2     | .64   |     |     |     |     | .44   | .66    | 6.0   | 4.5   | .71   | .51   | .57   |
| 3     | .64   |     |     |     |     | .45   | .71    | 4.8   | 4.0   | .71   | .51   | .57   |
| 4     | .57   |     |     |     |     | .45   | .78    | 4.0   | 3.5   | .64   | .51   | .78   |
| 5     | 1.1   |     |     |     |     | .45   | 1.1    | 3.7   | 3.3   | .57   | .51   | 1.3   |
| 6     | .71   |     |     |     |     | .45   | 1.4    | 3.5   | 2.9   | .57   | .45   | .87   |
| 7     | .64   |     |     |     |     | .45   | 2.1    | 3.5   | 2.7   | .51   | .51   | 1.4   |
| 8     | .63   |     |     |     |     | .40   | 2.5    | 3.5   | 2.5   | .51   | .51   | 1.2   |
| 9     | .45   |     |     |     |     | .35   | 3.1    | 3.3   | 2.5   | .51   | .45   | 1.1   |
| 10    | .45   |     |     |     |     | .40   | 3.3    | 3.3   | 2.3   | .57   | .45   | .88   |
| 11    | .45   |     |     |     |     | .40   | 3.3    | 3.1   | 2.1   | 2.7   | .51   | .78   |
| 12    | .35   |     |     |     |     | .37   | 3.3    | 2.9   | 1.8   | 1.3   | .51   | .78   |
| 13    | .35   |     |     |     |     | .35   | 3.1    | 2.7   | 1.7   | .87   | .51   | .78   |
| 14    | .40   |     |     |     |     | .35   | 2.9    | 2.5   | 1.5   | .78   | .51   | .78   |
| 15    | .40   |     |     |     |     | .35   | 3.0    | 2.3   | 1.5   | .77   | .51   | .70   |
| 16    | .40   |     |     |     |     | .35   | 3.5    | 2.3   | 1.5   | .78   | .51   | .64   |
| 17    | .40   |     |     |     |     | .35   | 6.3    | 2.5   | 1.4   | .78   | .45   | .64   |
| 18    | .40   |     |     |     |     | .35   | 8.6    | 2.3   | 1.3   | .78   | .45   | .64   |
| 19    | .45   |     |     |     |     | .35   | 7.9    | 2.1   | 1.3   | .78   | .40   | .64   |
| 20    | .40   |     |     |     |     | .40   | 6.0    | 2.1   | 1.2   | .71   | .35   | .71   |
| 21    | .40   |     |     |     |     | .40   | 5.1    | 1.8   | 1.2   | .64   | .35   | .64   |
| 22    | .40   |     |     |     |     | .40   | 4.6    | 1.8   | 1.2   | .64   | .35   | .64   |
| 23    | .36   |     |     |     |     | .40   | 4.8    | 1.8   | 1.1   | .64   | .31   | .64   |
| 24    | .35   |     |     |     |     | .45   | 4.8    | 2.0   | .96   | .64   | .35   | .64   |
| 25    | .35   |     |     |     |     | .45   | 5.1    | 2.0   | .87   | .64   | .95   | .64   |
| 26    | .35   |     |     |     |     | .45   | 6.0    | 2.1   | .87   | .57   | 2.1   | .59   |
| 27    | .35   |     |     |     |     | .42   | 6.3    | 6.8   | .78   | .57   | .88   | .57   |
| 28    | .35   |     |     |     |     | .39   | 7.0    | 10    | .78   | .64   | .64   | .57   |
| 29    | .35   |     |     |     |     | .48   | 7.0    | 9.4   | .78   | .64   | .64   | .57   |
| 30    | .35   |     |     |     |     | .60   | 7.0    | 8.1   | .73   | .64   | .57   | .57   |
| 31    | .35   |     |     |     |     | .70   | ---    | 7.0   | ---   | .57   | .57   | ---   |
| TOTAL | 14.14 |     |     |     |     | 13.00 | 121.85 | 119.8 | 58.07 | 23.02 | 17.40 | 22.34 |
| MEAN  | .46   |     |     |     |     | .42   | 4.06   | 3.86  | 1.94  | .74   | .56   | .74   |
| MAX   | 1.1   |     |     |     |     | .70   | 8.6    | 10    | 5.3   | 2.7   | 2.1   | 1.4   |
| MIN   | .35   |     |     |     |     | .35   | .60    | 1.8   | .73   | .51   | .31   | .51   |
| AC-FT | 28    |     |     |     |     | 26    | 242    | 238   | 115   | 46    | 35    | 44    |

06289600 WEST PASS CREEK NEAR PARKMAN, WY

LOCATION.--Lat 44°59'16", long 107°28'56", in NE1/4 NE1/4 SE1/4 sec.21, T.58 N., R.88 W., Sheridan County, Hydrologic Unit 10080016, on right bank, anchored to concrete headwall of culvert on county road and 7.6 mi northwest of Parkman. Prior to Mar. 27, 1986, at site 300 ft upstream.

DRAINAGE AREA.--15.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to current year (no winter records since 1985).

GAGE.--Water-stage recorder. Elevation of gage is 4,550 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Apr. 2, 1985, at site 100 ft north (on abandoned channel) at datum 3.28 ft lower. Apr. 2, 1985 to Mar. 27, 1986, at site 300 ft upstream at datum 1.95 ft higher.

REMARKS.--Estimated daily discharge Oct. 31 and Mar. 1-5. Records good. Natural flow of stream affected by diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 195 ft<sup>3</sup>/s, May 16, 1984, gage height, 4.62 ft, site and datum then in use; maximum gage height, 4.76 ft, Apr. 28, 1984 (backwater from ice and snow), site and datum then in use; minimum daily discharge during periods of seasonal record, 3.8 ft<sup>3</sup>/s, Aug. 26, 27, 1985.

Peak discharges for water years 1983-86 greater than base discharge of 20 ft<sup>3</sup>/s and maximum (\*):

| Date          | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date         | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------------|------|-----------------------------------|---------------------|--------------|------|-----------------------------------|---------------------|
| Nov. 26, 1982 | --   | --                                | a,b*2.74            | Apr. 2, 1985 | 1630 | 24                                | a2.53               |
| May 6, 1983   | 2130 | 35                                | a2.29               | May 2, 1985  | 1000 | *25                               | a*2.55              |
| May 27, 1983  | 2200 | *50                               | a2.64               |              |      |                                   |                     |
| Apr. 28, 1984 | --   | --                                | a,b*4.76            | May 10, 1986 | 1600 | 27                                | 1.21                |
| May 4, 1984   | 1900 | 53                                | a2.82               | June 4, 1986 | 0100 | *45                               | *1.73               |
| May 9, 1984   | 1600 | 132                               | a4.08               | June 9, 1986 | 0900 | 43                                | 1.66                |
| May 16, 1984  | 0200 | *195                              | a4.62               |              |      |                                   |                     |
| May 31, 1984  | 1800 | 83                                | a3.17               |              |      |                                   |                     |

a Site and datum then in use.

b Backwater from ice.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| May 2  | 0900 | *29                               | *1.22               | July 11 | 1130 | 27                                | 1.19                |
| May 29 | 1400 | 26                                | 1.17                |         |      |                                   |                     |

Minimum daily discharge during period of operation, 5.1 ft<sup>3</sup>/s, Mar. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV | DEC | JAN | FEB | MAR   | APR   | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-----|-----|-----|-----|-------|-------|------|-------|-------|-------|-------|
| 1     | 8.4   |     |     |     |     | 6.2   | 10    | 28   | 18    | 8.5   | 7.9   | 7.3   |
| 2     | 11    |     |     |     |     | 6.2   | 8.2   | 28   | 17    | 8.7   | 7.9   | 7.2   |
| 3     | 9.0   |     |     |     |     | 6.2   | 10    | 26   | 16    | 9.1   | 7.8   | 7.0   |
| 4     | 8.2   |     |     |     |     | 6.4   | 10    | 23   | 15    | 9.0   | 7.7   | 8.2   |
| 5     | 9.9   |     |     |     |     | 6.4   | 9.6   | 22   | 14    | 8.7   | 7.5   | 8.4   |
| 6     | 8.5   |     |     |     |     | 6.4   | 9.3   | 22   | 14    | 8.5   | 7.3   | 7.4   |
| 7     | 8.2   |     |     |     |     | 6.1   | 9.2   | 21   | 14    | 8.4   | 7.6   | 9.9   |
| 8     | 8.1   |     |     |     |     | 6.2   | 9.6   | 20   | 13    | 8.4   | 7.5   | 8.0   |
| 9     | 8.0   |     |     |     |     | 5.7   | 10    | 20   | 13    | 8.7   | 7.2   | 7.8   |
| 10    | 9.0   |     |     |     |     | 6.1   | 10    | 19   | 13    | 9.3   | 7.1   | 7.9   |
| 11    | 8.5   |     |     |     |     | 6.1   | 11    | 19   | 12    | 17    | 7.1   | 7.9   |
| 12    | 7.9   |     |     |     |     | 6.2   | 11    | 18   | 11    | 10    | 7.4   | 7.9   |
| 13    | 8.3   |     |     |     |     | 6.3   | 11    | 17   | 11    | 9.4   | 7.4   | 7.8   |
| 14    | 8.1   |     |     |     |     | 6.2   | 11    | 16   | 11    | 9.0   | 7.3   | 7.8   |
| 15    | 7.8   |     |     |     |     | 6.1   | 12    | 14   | 11    | 8.6   | 7.4   | 7.7   |
| 16    | 7.8   |     |     |     |     | 6.2   | 13    | 14   | 11    | 8.2   | 7.4   | 7.7   |
| 17    | 7.7   |     |     |     |     | 6.6   | 14    | 16   | 11    | 8.9   | 7.1   | 7.8   |
| 18    | 7.6   |     |     |     |     | 6.4   | 16    | 15   | 9.7   | 9.0   | 7.1   | 8.0   |
| 19    | 7.4   |     |     |     |     | 7.1   | 18    | 14   | 9.7   | 8.2   | 7.0   | 7.6   |
| 20    | 7.2   |     |     |     |     | 6.7   | 17    | 14   | 9.4   | 7.8   | 6.5   | 7.3   |
| 21    | 7.2   |     |     |     |     | 6.3   | 16    | 14   | 9.2   | 8.0   | 6.4   | 7.2   |
| 22    | 7.2   |     |     |     |     | 5.9   | 17    | 13   | 9.3   | 8.1   | 6.6   | 7.2   |
| 23    | 7.2   |     |     |     |     | 6.4   | 18    | 13   | 9.1   | 8.0   | 6.6   | 7.3   |
| 24    | 7.2   |     |     |     |     | 6.4   | 19    | 12   | 8.9   | 7.8   | 6.9   | 7.5   |
| 25    | 7.2   |     |     |     |     | 6.7   | 22    | 12   | 8.7   | 7.9   | 10    | 7.4   |
| 26    | 7.2   |     |     |     |     | 6.6   | 25    | 12   | 8.6   | 8.0   | 12    | 7.1   |
| 27    | 7.0   |     |     |     |     | 5.1   | 27    | 20   | 8.3   | 8.2   | 7.9   | 7.0   |
| 28    | 7.2   |     |     |     |     | 5.2   | 27    | 19   | 8.4   | 8.3   | 7.7   | 7.8   |
| 29    | 7.2   |     |     |     |     | 5.5   | 27    | 20   | 8.5   | 8.3   | 7.6   | 7.6   |
| 30    | 7.1   |     |     |     |     | 7.3   | 27    | 20   | 8.4   | 7.9   | 7.6   | 7.3   |
| 31    | 7.0   |     |     |     |     | 13    | ---   | 19   | ---   | 8.0   | 7.4   | ---   |
| TOTAL | 245.3 |     |     |     |     | 200.2 | 454.9 | 560  | 341.2 | 271.9 | 233.9 | 230.0 |
| MEAN  | 7.91  |     |     |     |     | 6.46  | 15.2  | 18.1 | 11.4  | 8.77  | 7.55  | 7.67  |
| MAX   | 11    |     |     |     |     | 13    | 27    | 28   | 18    | 17    | 12    | 9.9   |
| MIN   | 7.0   |     |     |     |     | 5.1   | 8.2   | 12   | 8.3   | 7.8   | 6.4   | 7.0   |
| AC-FT | 487   |     |     |     |     | 397   | 902   | 1110 | 677   | 539   | 464   | 456   |

YELLOWSTONE RIVER BASIN  
06289820 EAST PASS CREEK NEAR DAYTON, WY

LOCATION.--Lat 44°59'23", long 107°25'20", in SE1/4 SE1/4 NE1/4 sec.24, T.58 N., R.88 W., Sheridan County, Hydrologic Unit 10080016, on left bank 0.3 mi downstream from bridge on county road, 5.0 mi northwest of Parkman, and 11.2 mi northwest of Dayton.

DRAINAGE AREA.--21.7 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,410 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 9-14, 18, 19, Dec. 1, 4, 9-12, 15, 17-21, 26, Jan. 1-27, Feb. 20-22, 24-28, Mar. 1, 22, 28-31, and Apr. 1, 2. Records good except those for estimated daily discharges, which are poor. Several small reservoirs upstream from station, combined capacity, 415 acre-ft, for irrigation. Diversions for irrigation of about 2,900 acres upstream from station.

AVERAGE DISCHARGE.--5 years, 14.4 ft<sup>3</sup>/s, 10,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 197 ft<sup>3</sup>/s, May 16, 1984, gage height, 3.14 ft; maximum gage height, 3.47 ft, Dec. 18, 1984 (backwater from ice); minimum daily discharge, 2.5 ft<sup>3</sup>/s, Aug. 10, 11, 1987.

Peak discharges for water years 1983-86 greater than base discharge of 25 ft<sup>3</sup>/s and maximum (\*):

| Date          | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                         | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------------|------|--------------------------------|------------------|----------------------------------------------|------|--------------------------------|------------------|
| Apr. 25, 1983 | 0900 | 26                             | 1.68             | Dec. 18, 1984                                | --   | --                             | a*3.47           |
| May 29, 1983  | 0930 | *81                            | *2.37            | No peak greater than base discharge in 1985. |      |                                |                  |
| June 12, 1983 | 0800 | 66                             | 2.16             |                                              |      |                                |                  |
| Apr. 20, 1984 | 1030 | 43                             | 1.87             | Feb. 24, 1986                                | 1430 | 43                             | 1.78             |
| May 16, 1984  | 0230 | *197                           | *3.14            | May 22, 1986                                 | 1800 | 48                             | 1.86             |
| May 31, 1984  | 2130 | 115                            | 2.47             | June 4, 1986                                 | 0130 | 75                             | 2.16             |
| June 16, 1984 | 0430 | 101                            | 2.34             | June 9, 1986                                 | 2400 | *104                           | *2.42            |

a Backwater from ice.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|--------|------|--------------------------------|------------------|
| Jan. 22 | 2030 | ice jam                        | *2.22            | May 2  | 0230 | *36                            | 1.69             |
| Apr. 19 | 0900 | 27                             | 1.54             | June 1 | 1630 | 27                             | 1.54             |

Minimum daily discharge, 2.5 ft<sup>3</sup>/s, Aug. 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR  | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|
| 1     | 10    | 8.6   | 10    | 7.9   | 8.5   | 8.2   | 11   | 33   | 26    | 7.4   | 3.2   | 9.0   |
| 2     | 12    | 8.7   | 10    | 8.1   | 8.6   | 8.5   | 11   | 36   | 26    | 7.3   | 3.1   | 8.9   |
| 3     | 12    | 8.5   | 10    | 8.2   | 8.4   | 8.7   | 12   | 32   | 24    | 7.5   | 3.0   | 9.5   |
| 4     | 11    | 8.7   | 10    | 8.5   | 8.4   | 9.2   | 13   | 28   | 23    | 7.2   | 3.0   | 11    |
| 5     | 12    | 8.8   | 10    | 8.3   | 8.1   | 9.2   | 13   | 26   | 22    | 6.5   | 2.7   | 11    |
| 6     | 11    | 9.7   | 9.6   | 8.1   | 8.5   | 9.2   | 14   | 25   | 21    | 6.4   | 2.7   | 10    |
| 7     | 9.9   | 8.8   | 9.3   | 7.8   | 9.2   | 9.0   | 14   | 24   | 20    | 5.5   | 3.1   | 13    |
| 8     | 9.9   | 8.5   | 9.8   | 7.7   | 9.1   | 9.5   | 15   | 25   | 20    | 5.4   | 2.9   | 12    |
| 9     | 9.9   | 7.8   | 9.5   | 7.8   | 8.9   | 9.1   | 15   | 23   | 19    | 5.7   | 2.7   | 11    |
| 10    | 11    | 7.0   | 9.2   | 8.1   | 8.7   | 9.1   | 15   | 23   | 18    | 6.4   | 2.5   | 10    |
| 11    | 10    | 8.0   | 9.4   | 8.5   | 8.6   | 9.4   | 16   | 22   | 15    | 13    | 2.5   | 10    |
| 12    | 9.6   | 9.0   | 9.6   | 8.8   | 8.6   | 9.4   | 15   | 20   | 13    | 8.6   | 2.8   | 9.9   |
| 13    | 9.7   | 9.0   | 9.7   | 8.6   | 8.7   | 9.9   | 15   | 19   | 12    | 7.2   | 2.7   | 9.8   |
| 14    | 9.7   | 9.4   | 9.5   | 8.3   | 8.9   | 9.7   | 15   | 18   | 11    | 7.0   | 2.8   | 9.7   |
| 15    | 9.5   | 9.7   | 9.2   | 8.2   | 8.7   | 9.5   | 15   | 17   | 11    | 10    | 2.8   | 9.8   |
| 16    | 9.4   | 9.6   | 9.1   | 8.0   | 8.4   | 9.4   | 16   | 17   | 11    | 6.1   | 2.9   | 9.8   |
| 17    | 9.2   | 9.3   | 8.7   | 8.3   | 8.4   | 9.5   | 19   | 19   | 11    | 6.8   | 2.7   | 9.9   |
| 18    | 9.3   | 9.0   | 8.5   | 8.4   | 8.4   | 9.3   | 24   | 18   | 12    | 8.2   | 2.6   | 9.9   |
| 19    | 9.3   | 9.4   | 8.6   | 8.1   | 8.4   | 9.7   | 26   | 18   | 13    | 7.7   | 3.6   | 9.8   |
| 20    | 9.3   | 9.6   | 8.6   | 8.1   | 8.3   | 9.9   | 23   | 18   | 10    | 5.5   | 6.5   | 9.4   |
| 21    | 8.9   | 11    | 8.6   | 8.1   | 8.2   | 9.9   | 20   | 17   | 9.1   | 3.4   | 6.2   | 9.1   |
| 22    | 8.7   | 11    | 8.7   | 8.2   | 8.2   | 9.8   | 19   | 16   | 9.3   | 3.4   | 6.3   | 9.1   |
| 23    | 8.8   | 9.9   | 8.9   | 8.3   | 8.2   | 9.9   | 19   | 15   | 9.0   | 3.3   | 6.1   | 9.0   |
| 24    | 9.2   | 11    | 8.7   | 8.5   | 8.0   | 9.8   | 19   | 15   | 8.8   | 3.0   | 6.4   | 8.9   |
| 25    | 8.7   | 12    | 8.7   | 8.7   | 7.9   | 9.9   | 22   | 15   | 8.4   | 3.1   | 12    | 9.0   |
| 26    | 8.4   | 10    | 8.5   | 8.6   | 7.7   | 9.9   | 25   | 14   | 7.2   | 3.0   | 14    | 8.7   |
| 27    | 8.8   | 9.9   | 8.7   | 8.7   | 7.7   | 9.8   | 27   | 20   | 6.4   | 3.0   | 11    | 8.7   |
| 28    | 9.5   | 10    | 8.8   | 8.7   | 7.9   | 9.6   | 30   | 20   | 6.4   | 3.6   | 9.9   | 8.8   |
| 29    | 8.8   | 9.8   | 8.8   | 8.7   | ---   | 9.4   | 31   | 23   | 6.4   | 3.4   | 9.4   | 8.6   |
| 30    | 8.9   | 10    | 8.4   | 8.5   | ---   | 10    | 33   | 24   | 6.8   | 3.4   | 9.3   | 8.6   |
| 31    | 8.9   | ---   | 8.2   | 8.3   | ---   | 11    | ---  | 25   | ---   | 3.4   | 9.1   | ---   |
| TOTAL | 301.3 | 281.7 | 283.3 | 257.1 | 235.6 | 294.4 | 562  | 665  | 415.8 | 181.4 | 160.5 | 291.9 |
| MEAN  | 9.72  | 9.39  | 9.14  | 8.29  | 8.41  | 9.50  | 18.7 | 21.5 | 13.9  | 5.85  | 5.18  | 9.73  |
| MAX   | 12    | 12    | 10    | 8.8   | 9.2   | 11    | 33   | 36   | 26    | 13    | 14    | 13    |
| MIN   | 8.4   | 7.0   | 8.2   | 7.7   | 7.7   | 8.2   | 11   | 14   | 6.4   | 3.0   | 2.5   | 8.6   |
| AC-FT | 598   | 559   | 562   | 510   | 467   | 584   | 1110 | 1320 | 825   | 360   | 318   | 579   |

|             |       |        |      |      |     |     |     |     |       |      |
|-------------|-------|--------|------|------|-----|-----|-----|-----|-------|------|
| CAL YR 1986 | TOTAL | 5019.0 | MEAN | 13.8 | MAX | 100 | MIN | 5.6 | AC-FT | 9960 |
| WTR YR 1987 | TOTAL | 3930.0 | MEAN | 10.8 | MAX | 36  | MIN | 2.5 | AC-FT | 7800 |

06289870 TWIN CREEK NEAR PARKMAN, WY

LOCATION.--Lat 44°59'37", long 107°21'18", in SE1/4 NW1/4 NW1/4 sec.22, T.58 N., R.87 W., Sheridan County, Hydrologic Unit 10080016, on right bank 0.5 mi downstream from culvert on county road, 0.7 mi northwest of intersection of county road and U.S. Highway 87, and 2.8 mi north of Parkman.

DRAINAGE AREA.--27.0 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to current year (no winter records since 1985).

REVISED RECORDS.--WDR WY-86: 1984(M).

GAGE.--Water-stage recorder. Elevation of gage is 4,120 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 31, Mar. 1-3, 28-30, and June 23-30. Records good except those for estimated daily discharges, which are poor. Natural flow of stream affected by diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 377 ft<sup>3</sup>/s, Feb. 24, 1986, gage height, 7.44 ft (affected by backwater from trash and snow), from floodmark, from rating curve extended above 160 ft<sup>3</sup>/s on basis of culvert measurement of peak flow; minimum daily discharge during period of operation, 0.23 ft<sup>3</sup>/s, Aug. 8, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 36 ft<sup>3</sup>/s, Apr. 1, gage height, 1.63 ft; minimum daily during period of operation, 0.32 ft<sup>3</sup>/s, Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV | DEC | JAN | FEB | MAR   | APR   | MAY    | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-----|-----|-----|-----|-------|-------|--------|-------|-------|-------|-------|
| 1     | 1.2   |     |     |     |     | 1.4   | 30    | 5.9    | 5.8   | 1.4   | .44   | 1.2   |
| 2     | 1.7   |     |     |     |     | 2.4   | 22    | 7.1    | 3.7   | 2.9   | .39   | .91   |
| 3     | 2.3   |     |     |     |     | 5.2   | 15    | 7.0    | 2.9   | 3.0   | .37   | .84   |
| 4     | 1.9   |     |     |     |     | 9.2   | 19    | 6.4    | 2.2   | 2.9   | .37   | 1.1   |
| 5     | 2.0   |     |     |     |     | 13    | 18    | 5.8    | .92   | 2.5   | .32   | 2.1   |
| 6     | 1.7   |     |     |     |     | 9.4   | 15    | 5.1    | .68   | 2.6   | .35   | 2.2   |
| 7     | 1.4   |     |     |     |     | 7.1   | 12    | 4.7    | .69   | 3.5   | .38   | 3.9   |
| 8     | 1.3   |     |     |     |     | 6.2   | 9.4   | 4.3    | .84   | 3.4   | .43   | 5.1   |
| 9     | 1.2   |     |     |     |     | 5.5   | 8.6   | 3.7    | 2.5   | 3.4   | .36   | 4.1   |
| 10    | 1.2   |     |     |     |     | 4.7   | 8.4   | 3.1    | 3.4   | 2.7   | .34   | 2.7   |
| 11    | 1.3   |     |     |     |     | 4.5   | 7.0   | 2.8    | 3.1   | 3.3   | .36   | 2.0   |
| 12    | 1.3   |     |     |     |     | 4.4   | 7.0   | 1.9    | 2.8   | 4.8   | .36   | 1.5   |
| 13    | 1.3   |     |     |     |     | 4.2   | 6.8   | 1.2    | .88   | 4.9   | .38   | 1.1   |
| 14    | 1.3   |     |     |     |     | 4.0   | 6.4   | .72    | 2.3   | 4.5   | .38   | .96   |
| 15    | 1.1   |     |     |     |     | 3.9   | 6.1   | 1.4    | 1.6   | 4.2   | .35   | .81   |
| 16    | 1.1   |     |     |     |     | 3.6   | 5.8   | .86    | 2.0   | 4.0   | .39   | .78   |
| 17    | 1.1   |     |     |     |     | 4.2   | 5.9   | 3.1    | 1.9   | 4.2   | .37   | .74   |
| 18    | 1.1   |     |     |     |     | 4.8   | 7.0   | 4.5    | 1.5   | 4.8   | .34   | .69   |
| 19    | 1.1   |     |     |     |     | 5.2   | 7.9   | 4.4    | 1.1   | 4.1   | .34   | .57   |
| 20    | 1.1   |     |     |     |     | 7.0   | 8.1   | 4.7    | 1.1   | 3.8   | .34   | .57   |
| 21    | 1.0   |     |     |     |     | 7.9   | 7.5   | 4.7    | .90   | 3.5   | .37   | .57   |
| 22    | 1.1   |     |     |     |     | 7.1   | 7.1   | 4.7    | 1.6   | 3.5   | .37   | .47   |
| 23    | 1.0   |     |     |     |     | 5.3   | 6.9   | 4.4    | 2.0   | 2.7   | .37   | .47   |
| 24    | 1.0   |     |     |     |     | 3.9   | 6.8   | 4.0    | 1.4   | .64   | .57   | .44   |
| 25    | .99   |     |     |     |     | 4.8   | 6.6   | 3.6    | 1.3   | .64   | 2.3   | .57   |
| 26    | .99   |     |     |     |     | 5.6   | 6.3   | 3.5    | 1.2   | .61   | 6.7   | .67   |
| 27    | 1.0   |     |     |     |     | 6.1   | 6.1   | 5.3    | 1.1   | .58   | 9.2   | .68   |
| 28    | 1.0   |     |     |     |     | 5.0   | 6.0   | 8.8    | 1.0   | .55   | 6.1   | .69   |
| 29    | .99   |     |     |     |     | 4.3   | 5.9   | 8.7    | 1.1   | .50   | 3.6   | .52   |
| 30    | 1.0   |     |     |     |     | 4.8   | 5.9   | 10     | .90   | .47   | 2.2   | .49   |
| 31    | 1.0   |     |     |     |     | 7.5   | ---   | 7.7    | ---   | .44   | 1.5   | ---   |
| TOTAL | 38.77 |     |     |     |     | 172.2 | 290.5 | 144.08 | 54.41 | 85.03 | 40.64 | 39.44 |
| MEAN  | 1.25  |     |     |     |     | 5.55  | 9.68  | 4.65   | 1.81  | 2.74  | 1.31  | 1.31  |
| MAX   | 2.3   |     |     |     |     | 13    | 30    | 10     | 5.8   | 4.9   | 9.2   | 5.1   |
| MIN   | .99   |     |     |     |     | 1.4   | 5.8   | .72    | .68   | .44   | .32   | .44   |
| AC-FT | 77    |     |     |     |     | 342   | 576   | 286    | 108   | 169   | 81    | 78    |



## 06291200 LODGE GRASS CREEK AT STATE LINE, NEAR WYOLA, MT

LOCATION.--Lat 45°00'21", long 107°46'27", in NW1/4 NW1/4 SE1/4 sec.34, T.9 S., R.32 E., Big Horn County, Hydrologic Unit 10080016, on left bank 4.2 mi upstream from North Fork Lodge Grass Creek, 25 mi southwest of Wyola, 32 mi southwest of Lodge Grass, and at mile 58.4.

DRAINAGE AREA.--16.7 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to current year (no winter record in water year 1986).

GAGE.--Water-stage recorder. Elevation of gage is 6,060 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 12, Nov. 6-14, 18, 25, 26, 30, Dec. 1-5, 7-11, 17-19, Jan. 1, 6-11, 14-19, Feb. 16, 17, 19-28, Mar. 9, 20-31, and Apr. 2. Records good except those November to March, which are poor. No diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 349 ft<sup>3</sup>/s, June 4, 1986, gage height, 2.84 ft; minimum daily, 2.0 ft<sup>3</sup>/s, Dec. 11, 1982, result of freezeup.

Peak discharges for water years 1983-86 greater than base discharge of 70 ft<sup>3</sup>/s and maximum (\*):

| Date          | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date         | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------------|------|--------------------------------|------------------|--------------|------|--------------------------------|------------------|
| May 28, 1983  | 2000 | 158                            | 2.00             | May 24, 1985 | 1800 | *74                            | *1.54            |
| June 11, 1983 | 2300 | *225                           | *2.33            |              |      |                                |                  |
| June 18, 1983 | 1800 | 166                            | 2.04             |              |      |                                |                  |
| May 15, 1984  | 2000 | 151                            | 1.97             | May 21, 1986 | 2100 | 81                             | 1.77             |
| May 31, 1984  | 1600 | *240                           | *2.38            | June 4, 1986 | 0300 | *349                           | *2.84            |
| June 16, 1984 | 1700 | 228                            | 2.33             |              |      |                                |                  |

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 70 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|--------|------|--------------------------------|------------------|
| Apr. 30 | 2100 | 90                             | 1.61             | May 31 | 1800 | *115                           | *1.77            |
| May 8   | 1900 | 87                             | 1.60             |        |      |                                |                  |

Minimum daily discharge, 3.5 ft<sup>3</sup>/s, Jan. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| 1           | 8.4   | 6.7    | 6.1   | 4.5   | 4.2   | 4.4   | 4.4   | 81   | 69   | 22    | 12    | 8.4   |
| 2           | 8.7   | 6.8    | 6.0   | 4.6   | 4.4   | 4.4   | 4.3   | 66   | 64   | 21    | 11    | 8.3   |
| 3           | 8.3   | 7.4    | 6.0   | 4.5   | 4.4   | 4.3   | 4.6   | 49   | 64   | 20    | 11    | 8.3   |
| 4           | 8.6   | 7.3    | 6.0   | 4.4   | 4.4   | 4.5   | 4.8   | 48   | 60   | 19    | 11    | 8.3   |
| 5           | 9.9   | 7.3    | 6.2   | 4.2   | 4.4   | 4.7   | 5.2   | 57   | 57   | 19    | 11    | 9.5   |
| 6           | 9.1   | 6.8    | 6.0   | 4.1   | 4.5   | 4.6   | 6.0   | 62   | 56   | 17    | 11    | 8.8   |
| 7           | 8.9   | 6.4    | 6.0   | 4.1   | 4.6   | 4.5   | 6.5   | 65   | 54   | 17    | 11    | 11    |
| 8           | 9.0   | 6.0    | 5.8   | 4.0   | 4.5   | 4.2   | 6.9   | 67   | 52   | 17    | 11    | 9.0   |
| 9           | 8.8   | 5.2    | 5.4   | 3.7   | 4.6   | 4.1   | 6.6   | 68   | 54   | 17    | 10    | 8.7   |
| 10          | 8.3   | 5.6    | 5.0   | 3.9   | 4.7   | 4.2   | 6.5   | 65   | 56   | 20    | 10    | 8.1   |
| 11          | 7.6   | 5.8    | 5.8   | 3.9   | 4.6   | 4.2   | 6.4   | 62   | 50   | 28    | 9.9   | 8.0   |
| 12          | 8.8   | 6.2    | 5.8   | 3.9   | 4.6   | 4.3   | 6.6   | 62   | 45   | 21    | 9.9   | 8.0   |
| 13          | 8.5   | 6.6    | 5.8   | 3.9   | 4.6   | 4.5   | 6.1   | 60   | 43   | 18    | 9.9   | 7.6   |
| 14          | 8.2   | 6.8    | 5.6   | 3.8   | 4.6   | 4.5   | 6.4   | 57   | 41   | 17    | 9.9   | 7.6   |
| 15          | 8.2   | 7.0    | 5.5   | 3.5   | 4.6   | 4.4   | 7.0   | 56   | 40   | 16    | 9.9   | 7.6   |
| 16          | 8.1   | 7.0    | 5.5   | 3.7   | 4.4   | 4.4   | 8.2   | 56   | 39   | 15    | 9.9   | 7.6   |
| 17          | 8.0   | 7.0    | 5.4   | 3.9   | 4.6   | 4.4   | 11    | 59   | 36   | 15    | 9.8   | 7.6   |
| 18          | 7.8   | 7.0    | 5.4   | 4.0   | 4.6   | 4.4   | 13    | 51   | 35   | 15    | 9.5   | 7.6   |
| 19          | 7.8   | 7.0    | 5.4   | 4.2   | 4.5   | 4.5   | 14    | 48   | 37   | 15    | 9.5   | 7.3   |
| 20          | 7.8   | 6.8    | 5.5   | 4.3   | 4.2   | 4.4   | 11    | 47   | 33   | 14    | 9.1   | 7.0   |
| 21          | 7.7   | 6.9    | 5.5   | 4.3   | 4.4   | 4.2   | 11    | 42   | 31   | 14    | 9.1   | 7.0   |
| 22          | 7.8   | 6.7    | 5.5   | 4.3   | 4.5   | 4.3   | 12    | 40   | 30   | 15    | 9.1   | 7.0   |
| 23          | 7.8   | 6.7    | 5.3   | 4.4   | 4.5   | 4.3   | 15    | 38   | 30   | 14    | 9.1   | 7.0   |
| 24          | 7.7   | 6.8    | 5.3   | 4.4   | 4.3   | 4.3   | 21    | 38   | 28   | 14    | 9.1   | 7.0   |
| 25          | 7.6   | 6.6    | 5.3   | 4.3   | 4.1   | 4.4   | 30    | 40   | 27   | 13    | 11    | 7.0   |
| 26          | 7.5   | 6.4    | 5.1   | 4.4   | 4.1   | 4.3   | 43    | 38   | 26   | 13    | 10    | 7.0   |
| 27          | 7.6   | 6.7    | 5.0   | 4.1   | 4.3   | 4.3   | 58    | 50   | 25   | 13    | 9.4   | 6.9   |
| 28          | 7.5   | 6.6    | 4.9   | 4.2   | 4.4   | 4.1   | 71    | 58   | 24   | 13    | 9.1   | 6.8   |
| 29          | 7.3   | 6.4    | 4.8   | 4.0   | ---   | 3.9   | 74    | 61   | 23   | 13    | 8.7   | 6.8   |
| 30          | 7.7   | 6.2    | 4.7   | 4.1   | ---   | 4.1   | 77    | 64   | 22   | 13    | 8.7   | 6.7   |
| 31          | 7.4   | ---    | 4.6   | 4.1   | ---   | 4.4   | ---   | 81   | ---  | 12    | 8.5   | ---   |
| TOTAL       | 252.4 | 198.7  | 170.2 | 127.7 | 124.6 | 134.5 | 557.5 | 1736 | 1251 | 510   | 308.1 | 233.5 |
| MEAN        | 8.14  | 6.62   | 5.49  | 4.12  | 4.45  | 4.34  | 18.6  | 56.0 | 41.7 | 16.5  | 9.94  | 7.78  |
| MAX         | 9.9   | 7.4    | 6.2   | 4.6   | 4.7   | 4.7   | 77    | 81   | 69   | 28    | 12    | 11    |
| MIN         | 7.3   | 5.2    | 4.6   | 3.5   | 4.1   | 3.9   | 4.3   | 38   | 22   | 12    | 8.5   | 6.7   |
| AC-FT       | 501   | 394    | 338   | 253   | 247   | 267   | 1110  | 3440 | 2480 | 1010  | 611   | 463   |
| WTR YR 1987 | TOTAL | 5604.2 |       | MEAN  | 15.4  | MAX   | 81    | MIN  | 3.5  | AC-FT | 11120 |       |

06298000 TONGUE RIVER NEAR DAYTON, WY

LOCATION.--Lat 44°50'58", long 107°18'14", in NE1/4 NE1/4 NE1/4 sec.11, T.56 N., R.87 W., Sheridan County, Hydrologic Unit 10090101, on left bank 0.5 mi upstream from Crystal Draw, 0.6 mi downstream from intake of Highline ditch, and 2.5 mi southwest of Dayton.

DRAINAGE AREA.--204 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1918 to September 1929, October 1940 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1921.

GAGE.--Water-stage recorder. Elevation of gage is 4,060 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Small diversion upstream from station for Dayton municipal supply. Figures of daily discharge do not include water diverted 0.6 mi upstream from station by Highline ditch for irrigation downstream from station.

AVERAGE DISCHARGE.--58 years (water years 1919-29, 1941-87), 185 ft<sup>3</sup>/s, 134,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,400 ft<sup>3</sup>/s, June 3, 1944, gage height, 6.45 ft; minimum daily, 18 ft<sup>3</sup>/s, Nov. 29, 1919.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 980 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                 | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|--------------------------------------|------|--------------------------------|------------------|
| Apr 27 | 2300 | * 947                          | *3.99            | No peak greater than base discharge. |      |                                |                  |

Minimum daily discharge, 32 ft<sup>3</sup>/s, Nov. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|------|------|------|------|------|-------|-------|-------|------|------|------|
| 1     | 92   | 56   | 53   | 46   | 48   | 46   | 52    | 584   | 326   | 130  | 95   | 64   |
| 2     | 99   | 53   | 57   | 45   | 46   | 48   | 44    | 590   | 295   | 169  | 83   | 62   |
| 3     | 93   | 84   | 49   | 47   | 48   | 47   | 48    | 402   | 278   | 139  | 80   | 60   |
| 4     | 91   | 66   | 43   | 48   | 47   | 48   | 54    | 360   | 266   | 126  | 80   | 72   |
| 5     | 105  | 71   | 58   | 50   | 43   | 48   | 61    | 357   | 254   | 127  | 76   | 104  |
| 6     | 101  | 68   | 62   | 51   | 45   | 51   | 68    | 381   | 248   | 121  | 75   | 80   |
| 7     | 98   | 45   | 58   | 49   | 48   | 51   | 71    | 385   | 253   | 117  | 81   | 126  |
| 8     | 93   | 52   | 55   | 47   | 46   | 49   | 77    | 390   | 328   | 113  | 109  | 92   |
| 9     | 90   | 40   | 48   | 49   | 45   | 46   | 74    | 380   | 318   | 113  | 85   | 77   |
| 10    | 90   | 32   | 55   | 48   | 47   | 46   | 68    | 374   | 363   | 123  | 77   | 72   |
| 11    | 74   | 54   | 61   | 50   | 45   | 46   | 70    | 337   | 284   | 276  | 73   | 70   |
| 12    | 58   | 50   | 60   | 50   | 43   | 45   | 61    | 334   | 262   | 211  | 76   | 67   |
| 13    | 81   | 65   | 59   | 49   | 45   | 48   | 55    | 333   | 239   | 146  | 74   | 64   |
| 14    | 86   | 82   | 59   | 47   | 48   | 49   | 61    | 312   | 226   | 127  | 72   | 63   |
| 15    | 84   | 88   | 57   | 36   | 46   | 48   | 70    | 303   | 216   | 118  | 79   | 61   |
| 16    | 83   | 77   | 56   | 36   | 43   | 47   | 95    | 319   | 203   | 111  | 77   | 65   |
| 17    | 82   | 72   | 53   | 55   | 44   | 46   | 133   | 497   | 194   | 122  | 72   | 80   |
| 18    | 82   | 69   | 50   | 56   | 48   | 43   | 211   | 357   | 190   | 135  | 69   | 68   |
| 19    | 80   | 68   | 50   | 51   | 46   | 50   | 248   | 323   | 204   | 117  | 66   | 64   |
| 20    | 79   | 68   | 51   | 50   | 41   | 45   | 167   | 319   | 192   | 106  | 63   | 61   |
| 21    | 81   | 69   | 51   | 51   | 44   | 40   | 148   | 309   | 173   | 102  | 60   | 63   |
| 22    | 83   | 65   | 50   | 50   | 44   | 40   | 187   | 282   | 172   | 106  | 62   | 72   |
| 23    | 83   | 61   | 52   | 51   | 47   | 44   | 300   | 255   | 195   | 102  | 64   | 70   |
| 24    | 78   | 66   | 52   | 50   | 46   | 49   | 444   | 243   | 164   | 98   | 65   | 70   |
| 25    | 76   | 65   | 49   | 49   | 45   | 47   | 508   | 270   | 152   | 94   | 100  | 70   |
| 26    | 74   | 57   | 49   | 49   | 43   | 44   | 529   | 251   | 147   | 95   | 143  | 69   |
| 27    | 77   | 60   | 48   | 49   | 48   | 44   | 618   | 355   | 141   | 111  | 111  | 70   |
| 28    | 74   | 63   | 47   | 49   | 45   | 38   | 617   | 352   | 137   | 153  | 86   | 70   |
| 29    | 70   | 63   | 46   | 46   | ---  | 39   | 548   | 383   | 153   | 110  | 74   | 69   |
| 30    | 76   | 61   | 47   | 43   | ---  | 51   | 571   | 353   | 137   | 100  | 69   | 68   |
| 31    | 70   | ---  | 48   | 48   | ---  | 53   | ---   | 330   | ---   | 95   | 66   | ---  |
| TOTAL | 2583 | 1890 | 1633 | 1495 | 1274 | 1436 | 6258  | 11020 | 6710  | 3913 | 2462 | 2163 |
| MEAN  | 83.3 | 63.0 | 52.7 | 48.2 | 45.5 | 46.3 | 209   | 355   | 224   | 126  | 79.4 | 72.1 |
| MAX   | 105  | 88   | 62   | 56   | 48   | 53   | 618   | 590   | 363   | 276  | 143  | 126  |
| MIN   | 58   | 32   | 43   | 36   | 41   | 38   | 44    | 243   | 137   | 94   | 60   | 60   |
| AC-FT | 5120 | 3750 | 3240 | 2970 | 2530 | 2850 | 12410 | 21860 | 13310 | 7760 | 4880 | 4290 |
| †     | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 1560  | 1540  | 1280 | 1420 | 1090 |

## ADJUSTED FOR DIVERSION BY HIGHLINE DITCH

|       |      |      |      |      |      |      |       |       |       |      |      |      |
|-------|------|------|------|------|------|------|-------|-------|-------|------|------|------|
| MEAN  | 83.3 | 63.0 | 52.7 | 48.2 | 45.5 | 46.3 | 209   | 380   | 250   | 147  | 103  | 90.4 |
| AC-FT | 5120 | 3750 | 3240 | 2970 | 2530 | 2850 | 12410 | 23420 | 14850 | 9040 | 6300 | 5380 |

## UNADJUSTED

## ADJUSTED

|             |       |       |      |     |     |      |     |    |       |        |      |     |       |        |
|-------------|-------|-------|------|-----|-----|------|-----|----|-------|--------|------|-----|-------|--------|
| CAL YR 1986 | TOTAL | 63668 | MEAN | 174 | MAX | 1800 | MIN | 27 | AC-FT | 126300 | MEAN | 181 | AC-FT | 131000 |
| WTR YR 1987 | TOTAL | 42837 | MEAN | 117 | MAX | 618  | MIN | 32 | AC-FT | 84970  | MEAN | 127 | AC-FT | 91860  |

† Diversion, in acre-ft, upstream from station by Highline Ditch.

## YELLOWSTONE RIVER BASIN

06298000 TONGUE RIVER NEAR DAYTON, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967-81, October 1986 to September 1987.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| MAY<br>21... | 0910 | 310                                             | 5.0                                  | <0.1                                                 | <0.01                                                | --                                                   | 0.4                                                                | <0.01                                       |
| JUN<br>29... | 1400 | 150                                             | 13.0                                 | <0.1                                                 | 0.03                                                 | 0.77                                                 | 0.8                                                                | 0.12                                        |

06299500 WOLF CREEK AT WOLF, WY

LOCATION.--Lat 44°46'21", long 107°14'01", in NE1/4 SW1/4 NW1/4 sec.4, T.55 N., R.86 W., Sheridan County, Hydrologic Unit 10090101, on left bank at Wolf and 0.5 mi downstream from Red Canyon Creek.

DRAINAGE AREA.--37.8 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1945 to current year (no winter records since 1971). Monthly discharge for January to March 1945, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 4,525 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May 26, 1945, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharge: Sept. 30. Records good. No diversion upstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--26 years (water years 1946-71), 29.3 ft<sup>3</sup>/s, 21,230 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,130 ft<sup>3</sup>/s, June 15, 1963, gage height, 4.60 ft, from rating curve extended above 500 ft<sup>3</sup>/s; no flow for part of each day Jan. 13, 15, 29, 30, Feb. 26, 1947, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, about 5.0 ft, May 18, 1944.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 180 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| May 17 | 0900 | *122                           | *2.07            | No other peak greater than base discharge. |      |                                |                  |

Minimum daily discharge during period of operation, 5.9 ft<sup>3</sup>/s, Apr. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR   | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|-------|------|------|------|------|------|
| 1     |     |     |     |     |     |     | 6.7   | 66   | 75   | 31   | 19   | 12   |
| 2     |     |     |     |     |     |     | 5.9   | 77   | 70   | 33   | 18   | 12   |
| 3     |     |     |     |     |     |     | 7.0   | 65   | 66   | 28   | 17   | 11   |
| 4     |     |     |     |     |     |     | 7.9   | 64   | 64   | 26   | 17   | 14   |
| 5     |     |     |     |     |     |     | 9.2   | 64   | 60   | 24   | 16   | 18   |
| 6     |     |     |     |     |     |     | 11    | 64   | 57   | 24   | 16   | 15   |
| 7     |     |     |     |     |     |     | 12    | 64   | 59   | 23   | 19   | 23   |
| 8     |     |     |     |     |     |     | 13    | 63   | 76   | 23   | 24   | 17   |
| 9     |     |     |     |     |     |     | 14    | 63   | 67   | 22   | 18   | 15   |
| 10    |     |     |     |     |     |     | 12    | 61   | 67   | 25   | 16   | 14   |
| 11    |     |     |     |     |     |     | 12    | 59   | 56   | 56   | 15   | 13   |
| 12    |     |     |     |     |     |     | 11    | 58   | 53   | 38   | 16   | 13   |
| 13    |     |     |     |     |     |     | 11    | 59   | 50   | 30   | 15   | 13   |
| 14    |     |     |     |     |     |     | 11    | 57   | 46   | 26   | 15   | 13   |
| 15    |     |     |     |     |     |     | 14    | 56   | 45   | 24   | 15   | 12   |
| 16    |     |     |     |     |     |     | 19    | 59   | 43   | 24   | 15   | 15   |
| 17    |     |     |     |     |     |     | 24    | 94   | 42   | 26   | 14   | 16   |
| 18    |     |     |     |     |     |     | 29    | 71   | 42   | 29   | 14   | 14   |
| 19    |     |     |     |     |     |     | 31    | 65   | 46   | 24   | 13   | 13   |
| 20    |     |     |     |     |     |     | 27    | 63   | 42   | 22   | 13   | 13   |
| 21    |     |     |     |     |     |     | 26    | 63   | 38   | 22   | 13   | 12   |
| 22    |     |     |     |     |     |     | 27    | 63   | 38   | 24   | 13   | 12   |
| 23    |     |     |     |     |     |     | 32    | 57   | 40   | 22   | 13   | 11   |
| 24    |     |     |     |     |     |     | 37    | 57   | 36   | 20   | 15   | 11   |
| 25    |     |     |     |     |     |     | 43    | 58   | 33   | 20   | 20   | 11   |
| 26    |     |     |     |     |     |     | 46    | 61   | 32   | 19   | 24   | 11   |
| 27    |     |     |     |     |     |     | 51    | 84   | 31   | 22   | 18   | 11   |
| 28    |     |     |     |     |     |     | 57    | 81   | 31   | 27   | 15   | 11   |
| 29    |     |     |     |     |     |     | 59    | 80   | 34   | 23   | 14   | 11   |
| 30    |     |     |     |     |     |     | 64    | 76   | 30   | 24   | 13   | 11   |
| 31    |     |     |     |     |     |     | ---   | 76   | ---  | 20   | 13   | ---  |
| TOTAL |     |     |     |     |     |     | 729.7 | 2048 | 1469 | 801  | 496  | 398  |
| MEAN  |     |     |     |     |     |     | 24.3  | 66.1 | 49.0 | 25.8 | 16.0 | 13.3 |
| MAX   |     |     |     |     |     |     | 64    | 94   | 76   | 56   | 24   | 23   |
| MIN   |     |     |     |     |     |     | 5.9   | 56   | 30   | 19   | 13   | 11   |
| AC-FT |     |     |     |     |     |     | 1450  | 4060 | 2910 | 1590 | 984  | 789  |

## YELLOWSTONE RIVER BASIN

06300500 EAST FORK BIG GOOSE CREEK NEAR BIG HORN, WY

LOCATION.--Lat 44°32'18", long 107°13'33", in SE1/4 SE1/4 NW1/4 sec.28, T.53 N., R.86 W., Johnson County, Hydrologic Unit 10090101, Bighorn National Forest, on right bank 0.7 mi upstream from Park Reservoir and 16 mi southwest of Big Horn.

DRAINAGE AREA.--20.1 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1953 to current year (no winter records since 1973). Prior to October 1960, published as East Goose Creek near Big Horn.

GAGE.--Water-stage recorder. Elevation of gage is 8,320 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 28, 1960, water-stage recorder at site 1.1 mi downstream at different datum. June 28, 1960, to July 14, 1970, water-stage recorder at site 0.9 mi downstream at different datums and July 15 to Oct. 7, 1970, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: July 15-21. Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--20 years (water years 1954-73), 32.6 ft<sup>3</sup>/s, 23,620 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,230 ft<sup>3</sup>/s, June 15, 1963, gage height, 4.59 ft, site and datum then in use, from rating curve extended above 250 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 1.0 ft<sup>3</sup>/s, Dec. 11-14, 1963, Mar. 24, 25, Nov. 14, 15, 1964, Mar. 18, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 413 ft<sup>3</sup>/s, May 17, gage height, 5.12 ft; minimum daily during period of operation, 8.0 ft<sup>3</sup>/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY  | JUN  | JUL  | AUG  | SEP   |
|-------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|-------|
| 1     |     |     |     |     |     |     |     | 130  | 106  | 27   | 24   | 18    |
| 2     |     |     |     |     |     |     |     | 127  | 75   | 28   | 21   | 16    |
| 3     |     |     |     |     |     |     |     | 83   | 62   | 24   | 19   | 15    |
| 4     |     |     |     |     |     |     |     | 67   | 59   | 24   | 18   | 17    |
| 5     |     |     |     |     |     |     |     | 70   | 69   | 25   | 16   | 20    |
| 6     |     |     |     |     |     |     |     | 87   | 82   | 23   | 16   | 16    |
| 7     |     |     |     |     |     |     |     | 109  | 98   | 22   | 17   | 25    |
| 8     |     |     |     |     |     |     |     | 130  | 244  | 20   | 18   | 25    |
| 9     |     |     |     |     |     |     |     | 140  | 161  | 19   | 16   | 21    |
| 10    |     |     |     |     |     |     |     | 137  | 137  | 41   | 14   | 20    |
| 11    |     |     |     |     |     |     |     | 124  | 107  | 80   | 12   | 19    |
| 12    |     |     |     |     |     |     |     | 129  | 94   | 71   | 14   | 17    |
| 13    |     |     |     |     |     |     |     | 134  | 86   | 51   | 14   | 16    |
| 14    |     |     |     |     |     |     |     | 128  | 79   | 41   | 13   | 15    |
| 15    |     |     |     |     |     |     |     | 142  | 70   | 37   | 18   | 14    |
| 16    |     |     |     |     |     |     |     | 163  | 68   | 34   | 17   | 16    |
| 17    |     |     |     |     |     |     |     | 262  | 62   | 30   | 15   | 18    |
| 18    |     |     |     |     |     |     |     | 149  | 56   | 34   | 13   | 16    |
| 19    |     |     |     |     |     |     |     | 127  | 63   | 42   | 12   | 14    |
| 20    |     |     |     |     |     |     |     | 115  | 56   | 44   | 11   | 13    |
| 21    |     |     |     |     |     |     |     | 100  | 49   | 42   | 11   | 12    |
| 22    |     |     |     |     |     |     |     | 83   | 45   | 39   | 13   | 12    |
| 23    |     |     |     |     |     |     |     | 69   | 42   | 34   | 13   | 11    |
| 24    |     |     |     |     |     |     |     | 66   | 38   | 29   | 15   | 10    |
| 25    |     |     |     |     |     |     |     | 65   | 35   | 26   | 19   | 9.8   |
| 26    |     |     |     |     |     |     |     | 67   | 32   | 24   | 35   | 9.2   |
| 27    |     |     |     |     |     |     |     | 73   | 30   | 29   | 37   | 8.5   |
| 28    |     |     |     |     |     |     |     | 78   | 30   | 37   | 30   | 8.5   |
| 29    |     |     |     |     |     |     |     | 89   | 30   | 31   | 24   | 8.2   |
| 30    |     |     |     |     |     |     |     | 82   | 27   | 32   | 22   | 8.0   |
| 31    |     |     |     |     |     |     |     | 94   | ---  | 26   | 19   | ---   |
| TOTAL |     |     |     |     |     |     |     | 3419 | 2192 | 1066 | 556  | 448.2 |
| MEAN  |     |     |     |     |     |     |     | 110  | 73.1 | 34.4 | 17.9 | 14.9  |
| MAX   |     |     |     |     |     |     |     | 262  | 244  | 80   | 37   | 25    |
| MIN   |     |     |     |     |     |     |     | 65   | 27   | 19   | 11   | 8.0   |
| AC-FT |     |     |     |     |     |     |     | 6780 | 4350 | 2110 | 1100 | 889   |

06301500 WEST FORK BIG GOOSE CREEK NEAR BIG HORN, WY

LOCATION.--Lat 44°36'47", long 107°17'49", in NE1/4 SE1/4 NE1/4 sec.35, T.54 N., R.87 W., Sheridan County, Hydrologic Unit 10090101, Bighorn National Forest, on left bank 0.3 mi downstream from Twin Lakes Branch and 16 mi west of Big Horn.

DRAINAGE AREA.--24.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1953 to current year (no winter records since 1971). Prior to October 1960, published as West Goose Creek near Big Horn.

GAGE.--Water-stage recorder. Elevation of gage is 8,420 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Some regulation by Twin Lakes, capacity, 1,200 acre-ft, and Dome Lake, capacity, 1,800 acre-ft. No diversion upstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--18 years (water years 1954-71), 34.4 ft<sup>3</sup>/s, 24,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,030 ft<sup>3</sup>/s, June 15, 1963, gage height, 5.37 ft, from rating curve extended above 410 ft<sup>3</sup>/s on basis of velocity-area study; minimum daily, 0.80 ft<sup>3</sup>/s, Dec. 14, 26, 1963, Jan. 15, 16, Feb. 26, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 355 ft<sup>3</sup>/s, May 17, gage height, 3.65 ft; minimum daily during period of operation, 5.0 ft<sup>3</sup>/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY  | JUN  | JUL  | AUG  | SEP   |
|-------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|-------|
| 1     |     |     |     |     |     |     |     | 54   | 126  | 41   | 39   | 33    |
| 2     |     |     |     |     |     |     |     | 62   | 100  | 46   | 37   | 33    |
| 3     |     |     |     |     |     |     |     | 85   | 81   | 42   | 36   | 33    |
| 4     |     |     |     |     |     |     |     | 74   | 72   | 40   | 34   | 33    |
| 5     |     |     |     |     |     |     |     | 72   | 74   | 38   | 33   | 33    |
| 6     |     |     |     |     |     |     |     | 88   | 80   | 37   | 34   | 33    |
| 7     |     |     |     |     |     |     |     | 112  | 116  | 36   | 38   | 32    |
| 8     |     |     |     |     |     |     |     | 136  | 240  | 34   | 34   | 31    |
| 9     |     |     |     |     |     |     |     | 152  | 235  | 33   | 32   | 31    |
| 10    |     |     |     |     |     |     |     | 171  | 239  | 38   | 31   | 31    |
| 11    |     |     |     |     |     |     |     | 160  | 176  | 57   | 31   | 31    |
| 12    |     |     |     |     |     |     |     | 142  | 138  | 69   | 30   | 31    |
| 13    |     |     |     |     |     |     |     | 156  | 120  | 59   | 29   | 31    |
| 14    |     |     |     |     |     |     |     | 163  | 106  | 38   | 30   | 31    |
| 15    |     |     |     |     |     |     |     | 168  | 90   | 36   | 29   | 32    |
| 16    |     |     |     |     |     |     |     | 185  | 80   | 36   | 28   | 33    |
| 17    |     |     |     |     |     |     |     | 306  | 74   | 43   | 27   | 33    |
| 18    |     |     |     |     |     |     |     | 240  | 71   | 60   | 30   | 35    |
| 19    |     |     |     |     |     |     |     | 181  | 78   | 57   | 33   | 46    |
| 20    |     |     |     |     |     |     |     | 155  | 72   | 59   | 33   | 46    |
| 21    |     |     |     |     |     |     |     | 132  | 61   | 56   | 33   | 46    |
| 22    |     |     |     |     |     |     |     | 110  | 59   | 53   | 33   | 45    |
| 23    |     |     |     |     |     |     |     | 92   | 56   | 42   | 33   | 44    |
| 24    |     |     |     |     |     |     |     | 81   | 50   | 39   | 33   | 38    |
| 25    |     |     |     |     |     |     |     | 68   | 41   | 36   | 33   | 33    |
| 26    |     |     |     |     |     |     |     | 60   | 42   | 33   | 33   | 31    |
| 27    |     |     |     |     |     |     |     | 74   | 40   | 36   | 33   | 30    |
| 28    |     |     |     |     |     |     |     | 95   | 41   | 39   | 33   | 27    |
| 29    |     |     |     |     |     |     |     | 109  | 42   | 37   | 33   | 23    |
| 30    |     |     |     |     |     |     |     | 109  | 40   | 41   | 33   | 5.0   |
| 31    |     |     |     |     |     |     |     | 117  | ---  | 42   | 32   | ---   |
| TOTAL |     |     |     |     |     |     |     | 3909 | 2840 | 1353 | 1010 | 994.0 |
| MEAN  |     |     |     |     |     |     |     | 126  | 94.7 | 43.6 | 32.6 | 33.1  |
| MAX   |     |     |     |     |     |     |     | 306  | 240  | 69   | 39   | 46    |
| MIN   |     |     |     |     |     |     |     | 54   | 40   | 33   | 27   | 5.0   |
| AC-FT |     |     |     |     |     |     |     | 7750 | 5630 | 2680 | 2000 | 1970  |



06302000 BIG GOOSE CREEK NEAR SHERIDAN, WY

LOCATION.--Lat 44°42'08", long 107°10'51", in NW1/4 NE1/4 sec.35, T.55 N., R.86 W., Sheridan County, Hydrologic Unit 10090101, on right bank 0.4 mi upstream from Cave Creek and 14 mi southwest of Sheridan.

DRAINAGE AREA.--120 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1929 to current year (no winter records since 1971). Prior to October 1960, published as Goose Creek near Sheridan. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1006: Drainage area. WSP 1509: 1930(M), 1931.

GAGE.--Water-stage recorder. Elevation of gage is 4,505 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Sept. 11-30. Records good except those for estimated daily discharges, which are poor. Natural flow of stream affected by transbasin diversions, storage reservoirs, diversions for irrigation of about 20 acres and to Sheridan Filtration plant, and return flow from irrigated areas. PK ditch diverts water 0.6 mi upstream from station for irrigation of lands downstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--42 years (water years 1930-71), 79.6 ft<sup>3</sup>/s, 57,670 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,160 ft<sup>3</sup>/s, June 15, 1963, gage height, 5.83 ft, from rating curve extended above 1,600 ft<sup>3</sup>/s; minimum daily, 1.6 ft<sup>3</sup>/s, Nov. 29, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 476 ft<sup>3</sup>/s, June 10, gage height, 3.07 ft; minimum daily during period of operation, 16 ft<sup>3</sup>/s, Apr. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR  | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|------|-------|------|------|------|------|
| 1     |     |     |     |     |     |     | 19   | 154   | 169  | 35   | 32   | 25   |
| 2     |     |     |     |     |     |     | 16   | 189   | 144  | 58   | 26   | 24   |
| 3     |     |     |     |     |     |     | 19   | 185   | 119  | 42   | 24   | 24   |
| 4     |     |     |     |     |     |     | 20   | 185   | 97   | 36   | 24   | 30   |
| 5     |     |     |     |     |     |     | 22   | 154   | 82   | 34   | 21   | 35   |
| 6     |     |     |     |     |     |     | 24   | 152   | 82   | 26   | 19   | 30   |
| 7     |     |     |     |     |     |     | 26   | 176   | 121  | 24   | 28   | 44   |
| 8     |     |     |     |     |     |     | 28   | 185   | 267  | 22   | 35   | 34   |
| 9     |     |     |     |     |     |     | 28   | 185   | 319  | 21   | 26   | 30   |
| 10    |     |     |     |     |     |     | 25   | 199   | 415  | 35   | 21   | 30   |
| 11    |     |     |     |     |     |     | 25   | 187   | 256  | 118  | 20   | 28   |
| 12    |     |     |     |     |     |     | 24   | 163   | 207  | 102  | 21   | 28   |
| 13    |     |     |     |     |     |     | 22   | 163   | 157  | 72   | 21   | 28   |
| 14    |     |     |     |     |     |     | 23   | 163   | 139  | 50   | 24   | 28   |
| 15    |     |     |     |     |     |     | 29   | 165   | 124  | 41   | 23   | 28   |
| 16    |     |     |     |     |     |     | 41   | 178   | 105  | 39   | 22   | 29   |
| 17    |     |     |     |     |     |     | 60   | 332   | 92   | 53   | 22   | 30   |
| 18    |     |     |     |     |     |     | 72   | 296   | 89   | 86   | 21   | 30   |
| 19    |     |     |     |     |     |     | 72   | 220   | 113  | 70   | 18   | 30   |
| 20    |     |     |     |     |     |     | 49   | 201   | 96   | 68   | 21   | 40   |
| 21    |     |     |     |     |     |     | 47   | 187   | 75   | 65   | 19   | 40   |
| 22    |     |     |     |     |     |     | 58   | 163   | 65   | 65   | 21   | 38   |
| 23    |     |     |     |     |     |     | 73   | 137   | 66   | 45   | 20   | 36   |
| 24    |     |     |     |     |     |     | 83   | 124   | 55   | 41   | 21   | 34   |
| 25    |     |     |     |     |     |     | 97   | 113   | 44   | 39   | 29   | 32   |
| 26    |     |     |     |     |     |     | 99   | 85    | 37   | 35   | 37   | 31   |
| 27    |     |     |     |     |     |     | 100  | 139   | 32   | 43   | 36   | 30   |
| 28    |     |     |     |     |     |     | 140  | 150   | 32   | 43   | 29   | 30   |
| 29    |     |     |     |     |     |     | 142  | 165   | 44   | 40   | 32   | 30   |
| 30    |     |     |     |     |     |     | 144  | 160   | 35   | 42   | 32   | 29   |
| 31    |     |     |     |     |     |     | ---  | 160   | ---  | 40   | 30   | ---  |
| TOTAL |     |     |     |     |     |     | 1627 | 5415  | 3678 | 1530 | 775  | 935  |
| MEAN  |     |     |     |     |     |     | 54.2 | 175   | 123  | 49.4 | 25.0 | 31.2 |
| MAX   |     |     |     |     |     |     | 144  | 332   | 415  | 118  | 37   | 44   |
| MIN   |     |     |     |     |     |     | 16   | 85    | 32   | 21   | 18   | 24   |
| AC-FT |     |     |     |     |     |     | 3230 | 10740 | 7300 | 3030 | 1540 | 1850 |

06302000 BIG GOOSE CREEK NEAR SHERIDAN, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1986 to September 1987.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| MAY<br>21... | 1410 | 180                                             | 4.5                                  | <0.1                                                 | <0.01                                                | --                                                   | 0.4                                                                | <0.01                                       |
| JUN<br>29... | 1100 | 40                                              | 11.5                                 | <0.1                                                 | 0.03                                                 | 0.57                                                 | 0.6                                                                | 0.09                                        |

06303500 LITTLE GOOSE CREEK IN CANYON, NEAR BIG HORN, WY

LOCATION.--Lat 44°35'46", long 107°02'22", in SE1/4 SW1/4 NE1/4 sec.1, T.53 N., R.85 W., Sheridan County, Hydrologic Unit 10090101, on left bank 100 ft upstream from headgate of Lower Peralta ditch and 6.5 mi southwest of Big Horn.

DRAINAGE AREA.--51.6 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1941 to current year (no winter records since 1971).

REVISED RECORDS.--WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,860 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Apr. 1-7, June 17-22, and Sept. 10-23. Records good except those for estimated daily discharges, which are poor. Three small reservoirs upstream from station, combined capacity, 860 acre-ft, two of which store some imported water. Water imported into drainage basin upstream from station from East Goose Creek basin is diverted downstream from station for irrigation.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--30 years (water years 1942-71), 63.4 ft<sup>3</sup>/s, 45,930 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,350 ft<sup>3</sup>/s, June 15, 1963, gage height, 6.78 ft, from rating curve extended above 900 ft<sup>3</sup>/s; minimum recorded, 2.2 ft<sup>3</sup>/s, Dec. 4, 1949, gage height, 0.71 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 402 ft<sup>3</sup>/s, May 17, gage height, 3.93 ft; minimum daily during period of operation, 20 ft<sup>3</sup>/s, Apr. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR  | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|------|-------|------|------|------|------|
| 1     |     |     |     |     |     |     | 21   | 203   | 159  | 91   | 68   | 58   |
| 2     |     |     |     |     |     |     | 20   | 229   | 140  | 100  | 68   | 56   |
| 3     |     |     |     |     |     |     | 22   | 191   | 132  | 90   | 68   | 55   |
| 4     |     |     |     |     |     |     | 24   | 171   | 126  | 85   | 69   | 60   |
| 5     |     |     |     |     |     |     | 26   | 164   | 122  | 83   | 68   | 64   |
| 6     |     |     |     |     |     |     | 28   | 164   | 120  | 81   | 67   | 56   |
| 7     |     |     |     |     |     |     | 31   | 170   | 128  | 79   | 72   | 64   |
| 8     |     |     |     |     |     |     | 33   | 174   | 174  | 77   | 79   | 58   |
| 9     |     |     |     |     |     |     | 34   | 179   | 140  | 76   | 75   | 56   |
| 10    |     |     |     |     |     |     | 32   | 179   | 137  | 84   | 74   | 50   |
| 11    |     |     |     |     |     |     | 33   | 159   | 147  | 113  | 72   | 44   |
| 12    |     |     |     |     |     |     | 31   | 164   | 137  | 79   | 74   | 34   |
| 13    |     |     |     |     |     |     | 30   | 170   | 117  | 58   | 75   | 32   |
| 14    |     |     |     |     |     |     | 31   | 155   | 118  | 52   | 74   | 34   |
| 15    |     |     |     |     |     |     | 36   | 162   | 114  | 55   | 71   | 34   |
| 16    |     |     |     |     |     |     | 50   | 167   | 97   | 56   | 70   | 35   |
| 17    |     |     |     |     |     |     | 74   | 249   | 85   | 60   | 68   | 36   |
| 18    |     |     |     |     |     |     | 93   | 168   | 80   | 67   | 64   | 36   |
| 19    |     |     |     |     |     |     | 96   | 154   | 100  | 63   | 62   | 42   |
| 20    |     |     |     |     |     |     | 84   | 150   | 95   | 62   | 62   | 43   |
| 21    |     |     |     |     |     |     | 81   | 141   | 75   | 66   | 63   | 45   |
| 22    |     |     |     |     |     |     | 85   | 134   | 70   | 68   | 63   | 40   |
| 23    |     |     |     |     |     |     | 94   | 123   | 69   | 67   | 64   | 39   |
| 24    |     |     |     |     |     |     | 113  | 128   | 68   | 65   | 66   | 38   |
| 25    |     |     |     |     |     |     | 130  | 131   | 64   | 61   | 73   | 38   |
| 26    |     |     |     |     |     |     | 141  | 131   | 65   | 60   | 91   | 36   |
| 27    |     |     |     |     |     |     | 153  | 179   | 66   | 64   | 85   | 33   |
| 28    |     |     |     |     |     |     | 171  | 154   | 70   | 72   | 74   | 32   |
| 29    |     |     |     |     |     |     | 183  | 168   | 72   | 70   | 66   | 32   |
| 30    |     |     |     |     |     |     | 193  | 165   | 79   | 70   | 64   | 32   |
| 31    |     |     |     |     |     |     | ---  | 156   | ---  | 68   | 62   | ---  |
| TOTAL |     |     |     |     |     |     | 2173 | 5132  | 3166 | 2242 | 2171 | 1312 |
| MEAN  |     |     |     |     |     |     | 72.4 | 166   | 106  | 72.3 | 70.0 | 43.7 |
| MAX   |     |     |     |     |     |     | 193  | 249   | 174  | 113  | 91   | 64   |
| MIN   |     |     |     |     |     |     | 20   | 123   | 64   | 52   | 62   | 32   |
| AC-FT |     |     |     |     |     |     | 4310 | 10180 | 6280 | 4450 | 4310 | 2600 |

06304500 LITTLE GOOSE CREEK AT SHERIDAN, WY

LOCATION.--Lat 44°48'10", long 106°57'10", in NE1/4 NW1/4 SW1/4 sec.26, T.56 N., R.84 W., Sheridan County, Hydrologic Unit 10090101, at bridge on Sheridan Avenue in Sheridan and 0.6 mi upstream from mouth.

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | PH<br>(STAND-<br>ARD<br>UNITS) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) |
|-----------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------------|--------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| OCT 27... | 1440 | 47                                              | 640                                               | 11.0                                 | 8.2                            | 12.1                                | 127                                                            | K11                                                            |
| JAN 26... | 1445 | 30                                              | 650                                               | 0.0                                  | 8.2                            | 11.4                                | 93                                                             | 39                                                             |
| MAY 18... | 1425 | 62                                              | 440                                               | 14.0                                 | 8.5                            | 11.4                                | 130                                                            | K870                                                           |
| JUL 27... | 1340 | 32                                              | 720                                               | 22.0                                 | 8.5                            | 12.0                                | 160                                                            | 240                                                            |

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

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|-----------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| MAY 18... | 1425 | 62                                              | 14.0                                 | 0.01                                                            | 0.05                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |
| JUN 25... | 1315 | 37                                              | 20.0                                 | 0.03                                                            | 0.10                                                         | 0.04                      | <0.01                      | <0.01                      | <0.01                      |
| JUL 27... | 1340 | 32                                              | 22.0                                 | <0.01                                                           | 0.06                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| AUG 19... | 0800 | 28                                              | 13.5                                 | <0.01                                                           | 0.09                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |

## YELLOWSTONE RIVER BASIN

06305500 GOOSE CREEK BELOW SHERIDAN, WY

LOCATION.--Lat 44°49'25", long 106°57'40", in SE1/4 SW1/4 sec.15, T.56 N., R.84 W., Sheridan County, Hydrologic Unit 10090101, 700 ft north of Sheridan city limits and 0.2 mi downstream from Soldier Creek.

DRAINAGE AREA.--392 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1959-65, 1968 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>27... | 1615 | 98                                              | 660                                               | 8.1                            | 11.0                                 | 660                                                  | 11.6                                |
| JAN<br>26... | 1630 | 68                                              | 660                                               | 8.1                            | 1.0                                  | 660                                                  | 11.6                                |
| MAY<br>18... | 1640 | 380                                             | 225                                               | 8.1                            | 12.5                                 | 660                                                  | 9.8                                 |
| JUL<br>27... | 1530 | 93                                              | 690                                               | 8.6                            | 23.0                                 | 660                                                  | 8.1                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>27... | 122                                                            | K13000                                                         | 0.3                                                  | <0.01                                                | --                                                   | 5.6                                                                | 3.0                                         |
| JAN<br>26... | 95                                                             | 100                                                            | 0.4                                                  | 0.04                                                 | 0.56                                                 | 0.6                                                                | 0.25                                        |
| MAY<br>18... | 106                                                            | 510                                                            | <0.1                                                 | 0.03                                                 | 0.87                                                 | 0.9                                                                | 0.12                                        |
| JUL<br>27... | 110                                                            | 300                                                            | 0.3                                                  | <0.01                                                | --                                                   | 0.9                                                                | 0.29                                        |

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

06305700 GOOSE CREEK NEAR ACME, WY

LOCATION.--Lat 44°53'11", long 106°59'18", in SE1/4 SE1/4 NE1/4 sec.28, T.57 N., R.84 W., Sheridan County, Hydrologic Unit 10090101, on right bank 0.2 mi north of county road, 1.6 mi south of Acme, and 3.4 mi upstream from mouth.

DRAINAGE AREA.--411 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1984 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,620 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 9-22, Dec. 5 to Feb. 12, Feb. 23-28, and Mar. 1, 30, 31. Records good except those for estimated daily discharges, which are poor. Some regulation by many small reservoirs, combined capacity, about 15,000 acre-ft. Natural flow of stream affected by transbasin diversions, storage reservoirs, diversions for irrigation, and return flow from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,150 ft<sup>3</sup>/s, June 17, 1984, gage height, 6.13 ft, maximum gage height, 7.65 ft, Feb. 25, 1986, from floodmarks (backwater from ice); minimum daily discharge, 13 ft<sup>3</sup>/s, July 12, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 664 ft<sup>3</sup>/s, June 10, gage height, 4.26 ft; minimum daily, 52 ft<sup>3</sup>/s, July 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL    | AUG  | SEP  |
|-------------|-------|-------|------|------|------|------|-------|-------|-------|--------|------|------|
| 1           | 125   | 98    | 105  | 72   | 72   | 74   | 140   | 323   | 288   | 55     | 86   | 104  |
| 2           | 147   | 93    | 112  | 78   | 76   | 81   | 116   | 369   | 271   | 67     | 79   | 96   |
| 3           | 207   | 95    | 106  | 78   | 76   | 84   | 107   | 371   | 232   | 99     | 71   | 88   |
| 4           | 157   | 100   | 101  | 76   | 75   | 100  | 115   | 315   | 199   | 88     | 67   | 101  |
| 5           | 140   | 95    | 120  | 76   | 80   | 101  | 118   | 247   | 166   | 84     | 62   | 149  |
| 6           | 134   | 138   | 120  | 76   | 87   | 99   | 121   | 208   | 140   | 79     | 55   | 142  |
| 7           | 129   | 124   | 115  | 72   | 95   | 101  | 123   | 205   | 156   | 69     | 55   | 205  |
| 8           | 124   | 113   | 110  | 67   | 102  | 101  | 124   | 200   | 385   | 58     | 81   | 184  |
| 9           | 123   | 84    | 90   | 74   | 108  | 93   | 134   | 178   | 439   | 52     | 88   | 154  |
| 10          | 128   | 62    | 86   | 76   | 115  | 85   | 129   | 187   | 572   | 61     | 76   | 138  |
| 11          | 132   | 69    | 86   | 76   | 110  | 83   | 128   | 188   | 478   | 207    | 71   | 134  |
| 12          | 120   | 66    | 84   | 76   | 105  | 82   | 130   | 151   | 387   | 291    | 73   | 134  |
| 13          | 116   | 75    | 84   | 74   | 100  | 82   | 121   | 130   | 312   | 184    | 83   | 137  |
| 14          | 118   | 86    | 84   | 72   | 94   | 83   | 115   | 132   | 257   | 133    | 79   | 131  |
| 15          | 116   | 90    | 80   | 72   | 99   | 82   | 120   | 129   | 245   | 109    | 91   | 123  |
| 16          | 113   | 94    | 80   | 64   | 85   | 83   | 134   | 150   | 214   | 92     | 91   | 131  |
| 17          | 111   | 94    | 80   | 70   | 77   | 90   | 169   | 363   | 182   | 101    | 91   | 151  |
| 18          | 109   | 89    | 80   | 72   | 79   | 86   | 211   | 416   | 163   | 163    | 83   | 148  |
| 19          | 108   | 96    | 80   | 72   | 78   | 88   | 233   | 286   | 201   | 154    | 79   | 145  |
| 20          | 110   | 105   | 80   | 70   | 67   | 94   | 211   | 247   | 225   | 128    | 64   | 144  |
| 21          | 111   | 132   | 82   | 70   | 69   | 88   | 193   | 265   | 185   | 122    | 60   | 150  |
| 22          | 111   | 130   | 84   | 70   | 70   | 76   | 187   | 239   | 153   | 141    | 53   | 144  |
| 23          | 113   | 137   | 84   | 70   | 68   | 82   | 205   | 200   | 151   | 132    | 62   | 139  |
| 24          | 110   | 142   | 84   | 72   | 66   | 88   | 221   | 168   | 139   | 126    | 71   | 133  |
| 25          | 104   | 162   | 82   | 72   | 64   | 84   | 247   | 182   | 120   | 118    | 101  | 126  |
| 26          | 102   | 126   | 82   | 72   | 61   | 88   | 274   | 154   | 105   | 113    | 127  | 119  |
| 27          | 101   | 127   | 82   | 72   | 63   | 96   | 280   | 290   | 85    | 104    | 157  | 106  |
| 28          | 99    | 122   | 82   | 70   | 64   | 86   | 313   | 308   | 66    | 109    | 142  | 103  |
| 29          | 100   | 117   | 82   | 70   | ---  | 71   | 319   | 285   | 67    | 97     | 124  | 99   |
| 30          | 100   | 116   | 82   | 68   | ---  | 82   | 332   | 306   | 66    | 88     | 117  | 104  |
| 31          | 100   | ---   | 82   | 69   | ---  | 100  | ---   | 275   | ---   | 88     | 110  | ---  |
| TOTAL       | 3718  | 3177  | 2791 | 2238 | 2305 | 2713 | 5370  | 7467  | 6649  | 3512   | 2649 | 3962 |
| MEAN        | 120   | 106   | 90.0 | 72.2 | 82.3 | 87.5 | 179   | 241   | 222   | 113    | 85.5 | 132  |
| MAX         | 207   | 162   | 120  | 78   | 115  | 101  | 332   | 416   | 572   | 291    | 157  | 205  |
| MIN         | 99    | 62    | 80   | 64   | 61   | 71   | 107   | 129   | 66    | 52     | 53   | 88   |
| AC-FT       | 7370  | 6300  | 5540 | 4440 | 4570 | 5380 | 10650 | 14810 | 13190 | 6970   | 5250 | 7860 |
| CAL YR 1986 | TOTAL | 54476 | MEAN | 149  | MAX  | 1370 | MIN   | 34    | AC-FT | 108100 |      |      |
| WTR YR 1987 | TOTAL | 46551 | MEAN | 128  | MAX  | 572  | MIN   | 52    | AC-FT | 92330  |      |      |



## YELLOWSTONE RIVER BASIN

06305700 GOOSE CREEK NEAR ACME, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1984 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>27... | 1248 | 103                                             | 700                                               | 8.4                            | 11.0                                 | 660                                                  | 10.2                                |
| JAN<br>27... | 1000 | 70                                              | 705                                               | 8.4                            | 0.0                                  | 660                                                  | 11.8                                |
| MAY<br>19... | 0945 | 290                                             | 275                                               | 8.2                            | 13.0                                 | 660                                                  | 8.9                                 |
| JUL<br>27... | 1750 | 104                                             | 750                                               | 8.5                            | 23.0                                 | 660                                                  | 7.8                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>27... | 107                                                            | K33                                                            | <0.1                                                 | <0.01                                                | --                                                   | 0.4                                                                | 0.09                                        |
| JAN<br>27... | 93                                                             | 100                                                            | 0.4                                                  | 0.04                                                 | 0.86                                                 | 0.9                                                                | 0.22                                        |
| MAY<br>19... | 98                                                             | 680                                                            | <0.1                                                 | 0.03                                                 | 0.67                                                 | 0.7                                                                | 0.12                                        |
| JUL<br>27... | 106                                                            | 270                                                            | <0.1                                                 | <0.01                                                | --                                                   | 0.8                                                                | 0.22                                        |

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

## 06306250 PRAIRIE DOG CREEK NEAR ACME, WY

LOCATION.--Lat 44°59'02", long 106°50'21", in NE1/4 SW1/4 SW1/4 sec.23, T.58 N., R.83 W., Sheridan County, Hydrologic Unit 10090101, on right bank 600 ft upstream from county bridge, 0.9 mi upstream from mouth, 2.8 mi downstream from Coutant Creek, and 7.6 mi northeast of Acme.

DRAINAGE AREA.--358 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>25... | 1440 | 42                                              | 19.0                                 | <0.01                                                           | --                                                           | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>29... | 1815 | 89                                              | 24.0                                 | <0.01                                                           | 0.04                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>26... | 0740 | 39                                              | 12.0                                 | <0.01                                                           | 0.03                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## 06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT

LOCATION.--Lat 45°00'32", long 106°50'08", in NW1/4 NW1/4 NE1/4 sec.33, T.9 S., R.40 E., Big Horn County, Hydrologic Unit 10090101, on left bank 1 mi north of Wyoming-Montana State line, 1.4 mi southeast of Decker, 1.6 mi upstream from Badger Creek, and at mile 200.9.

DRAINAGE AREA.--1,477 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1960 to current year. Records published as "near Decker" May 1928 to September 1938, not equivalent owing to intervening drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,429.14 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Estimated daily discharges: Nov. 9 to Mar. 7, Mar. 28-30. Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated by many small reservoirs in Wyoming, combined capacity, about 15,000 acre-ft. Diversions for irrigation of about 64,300 acres upstream from station.

AVERAGE DISCHARGE.--27 years, 480 ft<sup>3</sup>/s, 347,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft<sup>3</sup>/s, May 19, 1978, gage height, 14.25 ft; minimum, 3.0 ft<sup>3</sup>/s, Aug. 23, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                 | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------------------------------------|------|-----------------------------------|---------------------|
| Apr. 28 | 1430 | *1,190                            | *4.84               | No peak greater than base discharge. |      |                                   |                     |

Minimum daily discharge, 80 ft<sup>3</sup>/s, Nov. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 309   | 265   | e180  | e170  | e270  | e170  | 285   | 1000  | 712   | 219   | 234   | 279   |
| 2     | 319   | 255   | e170  | e180  | e290  | e200  | 306   | 989   | 707   | 194   | 231   | 260   |
| 3     | 407   | 242   | e160  | e200  | e270  | e250  | 255   | 1010  | 644   | 234   | 217   | 253   |
| 4     | 406   | 272   | e170  | e220  | e260  | e300  | 254   | 793   | 590   | 224   | 207   | 251   |
| 5     | 360   | 260   | e180  | e190  | e260  | e350  | 269   | 706   | 541   | 207   | 197   | 295   |
| 6     | 356   | 290   | e170  | e170  | e270  | e300  | 282   | 656   | 501   | 206   | 188   | 350   |
| 7     | 344   | 335   | e180  | e150  | e290  | e260  | 291   | 628   | 484   | 187   | 175   | 365   |
| 8     | 331   | 284   | e170  | e140  | e320  | 256   | 291   | 613   | 629   | 170   | 208   | 442   |
| 9     | 320   | e200  | e140  | e160  | e300  | 249   | 300   | 586   | 935   | 155   | 251   | 381   |
| 10    | 312   | e80   | e150  | e180  | e290  | 229   | 300   | 558   | 1010  | 153   | 237   | 343   |
| 11    | 321   | e100  | e180  | e200  | e310  | 220   | 284   | 550   | 1040  | 242   | 215   | 324   |
| 12    | 301   | e90   | e200  | e230  | e300  | 216   | 292   | 509   | 824   | 651   | 199   | 319   |
| 13    | 273   | e120  | e210  | e240  | e290  | 211   | 274   | 454   | 738   | 520   | 211   | 320   |
| 14    | 285   | e150  | e200  | e200  | e280  | 212   | 255   | 437   | 628   | 372   | 212   | 315   |
| 15    | 289   | e170  | e200  | e120  | e270  | 214   | 254   | 413   | 585   | 303   | 211   | 307   |
| 16    | 285   | e200  | e190  | e150  | e270  | 209   | 261   | 406   | 545   | 275   | 226   | 305   |
| 17    | 281   | e240  | e190  | e170  | e260  | 216   | 299   | 579   | 494   | 251   | 228   | 325   |
| 18    | 278   | e230  | e190  | e190  | e260  | 218   | 378   | 967   | 454   | 348   | 224   | 345   |
| 19    | 276   | e250  | e180  | e180  | e250  | 215   | 488   | 685   | 453   | 369   | 214   | 335   |
| 20    | 275   | e270  | e190  | e190  | e230  | 221   | 511   | 586   | 520   | 316   | 204   | 324   |
| 21    | 278   | e300  | e190  | e190  | e240  | 226   | 431   | 610   | 497   | 279   | 197   | 323   |
| 22    | 279   | e290  | e200  | e210  | e240  | 208   | 404   | 600   | 435   | 281   | 186   | 319   |
| 23    | 280   | e320  | e210  | e230  | e240  | 191   | 455   | 564   | 409   | 302   | 182   | 317   |
| 24    | 284   | e350  | e200  | e250  | e240  | 203   | 597   | 510   | 433   | 283   | 196   | 308   |
| 25    | 279   | e300  | e200  | e270  | e220  | 219   | 739   | 480   | 385   | 274   | 241   | 293   |
| 26    | 273   | e240  | e210  | e290  | e190  | 215   | 836   | 510   | 354   | 265   | 308   | 289   |
| 27    | 269   | e250  | e210  | e310  | e170  | 227   | 882   | 549   | 317   | 252   | 384   | 277   |
| 28    | 268   | e230  | e220  | e290  | e160  | 228   | 1010  | 896   | 273   | 246   | 370   | 266   |
| 29    | 267   | e210  | e230  | e270  | ---   | e190  | 985   | 796   | 242   | 296   | 326   | 265   |
| 30    | 266   | e190  | e210  | e250  | ---   | e185  | 967   | 806   | 247   | 267   | 304   | 260   |
| 31    | 268   | ---   | e190  | e260  | ---   | e215  | ---   | 743   | ---   | 246   | 293   | ---   |
| TOTAL | 9339  | 6983  | 5870  | 6450  | 7240  | 7023  | 13435 | 20189 | 16626 | 8587  | 7276  | 9355  |
| MEAN  | 301   | 233   | 189   | 208   | 259   | 227   | 448   | 651   | 554   | 277   | 235   | 312   |
| MAX   | 407   | 350   | 230   | 310   | 320   | 350   | 1010  | 1010  | 1040  | 651   | 384   | 442   |
| MIN   | 266   | 80    | 140   | 120   | 160   | 170   | 254   | 406   | 242   | 153   | 175   | 251   |
| AC-FT | 18520 | 13850 | 11640 | 12790 | 14360 | 13930 | 26650 | 40040 | 32980 | 17030 | 14430 | 18560 |

CAL YR 1986 TOTAL 152483 MEAN 418 MAX 3400 MIN 80 AC-FT 302400  
WTR YR 1987 TOTAL 118373 MEAN 324 MAX 1040 MIN 80 AC-FT 234800

e Estimated

06306300 TONGUE RIVER AT STATE LINE, NEAR DECKER, MT--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1965 to September 1976, November 1980 to December 1986.

WATER TEMPERATURE: October 1965 to September 1976.

REMARKS.--Unpublished records of once-daily water temperature are available in files of Montana District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,490 microsiemens, Aug. 12, 1966, Jan. 11, 1972; minimum daily, 192 microsiemens, June 7, 1976.

WATER TEMPERATURE (water years 1966-76): Maximum, 30.5°C, July 16, 1966; minimum, 0.0°C on many days during winter.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE (Oct.-Dec): Maximum daily observed, 956 microsiemens, Nov. 12; minimum daily observed, 682 microsiemens, Oct. 4.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | CLOUD<br>COVER<br>(PER-<br>CENT) | WEATHER<br>(WMO<br>CODE<br>NUMBER) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>AIR<br>(DEG C) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) |
|--------------|------|-------------------------------------------------|----------------------------------|------------------------------------|---------------------------------------------------|------------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| NOV<br>18... | 1345 | 246                                             | 5                                | 1                                  | 718                                               | 2.0                                | 2.5                                  | 668                                                  | 14.0                                | 117                                                            | K5                                                             |
| JAN<br>05... | 1545 | 191                                             | --                               | --                                 | 766                                               | -0.5                               | 0.0                                  | --                                                   | --                                  | --                                                             | --                                                             |
| FEB<br>09... | 1450 | 305                                             | --                               | --                                 | 720                                               | 10.5                               | 0.0                                  | --                                                   | --                                  | --                                                             | --                                                             |
| APR<br>01... | 0815 | 258                                             | --                               | --                                 | 850                                               | 2.5                                | 5.5                                  | --                                                   | --                                  | --                                                             | --                                                             |
| MAY<br>12... | 0830 | 541                                             | 0                                | 0                                  | 293                                               | 15.5                               | 15.5                                 | 671                                                  | 7.8                                 | 89                                                             | --                                                             |
| JUN<br>22... | 1300 | 437                                             | 100                              | 2                                  | 488                                               | 14.5                               | 19.0                                 | 676                                                  | 8.3                                 | 101                                                            | --                                                             |
| AUG<br>03... | 1440 | 219                                             | 30                               | 1                                  | 690                                               | 23.5                               | 25.0                                 | 679                                                  | 9.3                                 | 127                                                            | 290                                                            |
| SEP<br>14... | 1500 | 307                                             | 0                                | 0                                  | 632                                               | 25.0                               | 19.5                                 | 672                                                  | 9.9                                 | 123                                                            | 77                                                             |

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

| DATE      | TIME | PH<br>(STAND-<br>ARD<br>UNITS) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) |
|-----------|------|--------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|----------------------------------------------|
| NOV 18... | 1345 | 8.3                            | 0.2                                                  | <0.01                                                | --                                                   | 0.6                                                                | 0.06                                        | 1                                            |
| MAY 12... | 0830 | 8.0                            | <0.1                                                 | 0.01                                                 | 0.59                                                 | 0.6                                                                | 0.09                                        | 1                                            |
| JUN 22... | 1300 | 8.3                            | <0.1                                                 | 0.02                                                 | 0.58                                                 | 0.6                                                                | 0.08                                        | --                                           |
| AUG 03... | 1440 | 8.0                            | <0.1                                                 | 0.08                                                 | --                                                   | <0.2                                                               | 0.12                                        | 1                                            |
| SEP 14... | 1500 | 8.3                            | <0.1                                                 | 0.01                                                 | 0.79                                                 | 0.8                                                                | 0.07                                        | <1                                           |

| DATE      | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) |
|-----------|----------------------------------------------|----------------------------------------------|-----------------------------------------------------|--------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|
| NOV 18... | 51                                           | <1                                           | <1                                                  | 9                                          | <5                                         | <0.1                                         | <1                                                  | <1                                           |
| MAY 12... | <100                                         | <1                                           | <1                                                  | --                                         | <5                                         | <0.1                                         | <1                                                  | <1                                           |
| JUN 22... | --                                           | --                                           | --                                                  | --                                         | --                                         | --                                           | --                                                  | --                                           |
| AUG 03... | 59                                           | <1                                           | <1                                                  | 16                                         | <5                                         | 0.1                                          | <1                                                  | <1                                           |
| SEP 14... | 51                                           | <1                                           | <1                                                  | --                                         | <5                                         | 0.1                                          | <1                                                  | <1                                           |

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>22... | 1300 | 0.01                                                            | 0.03                                                         | 0.03                      | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>03... | 1440 | <0.01                                                           | 0.03                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>14... | 1500 | <0.01                                                           | 0.02                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |
| 30...        | 1150 | <0.01                                                           | 0.03                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

[illegible]

## 06309200 MIDDLE FORK POWDER RIVER NEAR BARNUM, WY

LOCATION.--Lat 43°34'40", long 107°08'16", in SE1/4 SW1/4 NE1/4 sec.26, T.42 N., R.86 W., Washakie County, Hydrologic Unit 10090201, on left bank 1,100 ft downstream from Rock Creek and 13 mi southwest of Barnum.

DRAINAGE AREA.--45.2 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Elevation of gage is 7,220 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1970, at site 900 ft upstream at different datum. Since Sept. 15, 1983, supplementary water-stage recorder at site 100 ft downstream at datum 6.78 ft lower.

REMARKS.--Estimated daily discharges: Nov. 7-14, 23, 26, Dec. 1, 4, 5, and Mar. 9-12, 18, 20-23, 27-31. Records good except those for November to March, which are poor. No diversion upstream from station.

AVERAGE DISCHARGE.--26 years, 31.0 ft<sup>3</sup>/s, 22,460 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,110 ft<sup>3</sup>/s, June 15, 1963, gage height, 12.6 ft, from floodmark, site and datum then in use, on basis of slope-area measurement of peak flow; minimum daily discharge, 1.0 ft<sup>3</sup>/s, Dec. 15, 16, 1964, Jan. 24-27, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft<sup>3</sup>/s and maximum (\*):

| Date                                                      | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|-----------------------------------------------------------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| Apr. 26                                                   | 2030 | *595                           | a*8.41           | No other peak greater than base discharge. |      |                                |                  |
| a Supplementary gage datum.                               |      |                                |                  |                                            |      |                                |                  |
| Minimum daily discharge, 4.5 ft <sup>3</sup> /s, Jan. 29. |      |                                |                  |                                            |      |                                |                  |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR   | APR    | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|---------|-------|-------|-------|-------|--------|------|------|-------|-------|-------|
| 1           | 7.9   | 7.5     | 7.2   | 5.3   | 5.0   | 5.8   | 8.3    | 250  | 31   | 15    | 8.6   | 5.7   |
| 2           | 9.3   | 7.1     | 7.4   | 5.4   | 5.0   | 5.8   | 8.9    | 227  | 28   | 15    | 8.2   | 5.6   |
| 3           | 9.8   | 8.2     | 7.5   | 5.6   | 5.1   | 5.7   | 9.2    | 166  | 27   | 15    | 7.9   | 5.9   |
| 4           | 9.9   | 6.9     | 7.4   | 5.6   | 5.1   | 6.0   | 9.5    | 142  | 25   | 14    | 7.8   | 7.8   |
| 5           | 11    | 7.1     | 7.2   | 5.6   | 5.1   | 7.1   | 12     | 137  | 24   | 15    | 7.3   | 7.7   |
| 6           | 11    | 6.5     | 7.1   | 5.6   | 5.1   | 8.8   | 14     | 132  | 23   | 14    | 7.3   | 6.2   |
| 7           | 9.6   | 6.3     | 6.8   | 5.6   | 5.1   | 10    | 17     | 122  | 29   | 14    | 7.6   | 6.2   |
| 8           | 8.9   | 6.0     | 6.3   | 5.5   | 5.1   | 9.8   | 19     | 115  | 47   | 14    | 7.9   | 6.1   |
| 9           | 8.2   | 5.7     | 5.8   | 5.3   | 5.2   | 8.8   | 18     | 109  | 33   | 13    | 7.3   | 5.8   |
| 10          | 8.2   | 5.9     | 5.9   | 5.3   | 5.3   | 8.1   | 16     | 99   | 30   | 14    | 7.1   | 5.8   |
| 11          | 8.0   | 6.2     | 5.9   | 5.3   | 5.3   | 8.0   | 18     | 97   | 25   | 17    | 6.9   | 5.8   |
| 12          | 7.9   | 6.7     | 5.9   | 5.3   | 5.3   | 8.2   | 18     | 89   | 22   | 15    | 7.0   | 5.7   |
| 13          | 7.9   | 7.1     | 5.9   | 5.1   | 5.1   | 8.7   | 16     | 77   | 21   | 14    | 6.8   | 5.7   |
| 14          | 7.8   | 7.7     | 5.9   | 4.9   | 5.3   | 9.5   | 19     | 68   | 32   | 13    | 6.7   | 5.6   |
| 15          | 7.4   | 8.2     | 5.9   | 4.9   | 5.3   | 9.1   | 30     | 62   | 26   | 12    | 7.4   | 5.4   |
| 16          | 7.2   | 8.2     | 5.9   | 4.9   | 5.3   | 9.2   | 44     | 68   | 23   | 12    | 6.9   | 6.3   |
| 17          | 6.9   | 7.9     | 5.9   | 4.9   | 5.4   | 8.7   | 65     | 69   | 21   | 12    | 6.6   | 7.0   |
| 18          | 7.0   | 7.6     | 5.9   | 5.1   | 5.6   | 8.2   | 110    | 62   | 21   | 13    | 6.5   | 6.0   |
| 19          | 7.0   | 7.3     | 5.9   | 5.1   | 5.6   | 8.3   | 126    | 50   | 20   | 11    | 6.3   | 5.6   |
| 20          | 7.6   | 7.4     | 5.9   | 5.1   | 5.6   | 8.1   | 90     | 48   | 19   | 10    | 6.2   | 5.5   |
| 21          | 8.3   | 7.8     | 5.9   | 5.0   | 5.7   | 7.5   | 84     | 44   | 19   | 10    | 6.2   | 5.4   |
| 22          | 21    | 7.6     | 5.6   | 4.8   | 5.5   | 8.2   | 100    | 40   | 18   | 11    | 6.3   | 5.4   |
| 23          | 21    | 7.6     | 5.6   | 4.8   | 5.3   | 9.2   | 171    | 36   | 18   | 10    | 6.4   | 5.3   |
| 24          | 14    | 7.8     | 5.6   | 4.8   | 5.3   | 9.8   | 241    | 36   | 18   | 9.8   | 7.1   | 5.3   |
| 25          | 11    | 7.6     | 5.6   | 4.8   | 5.4   | 9.1   | 294    | 34   | 17   | 9.5   | 7.9   | 5.3   |
| 26          | 10    | 7.6     | 5.5   | 4.8   | 5.6   | 7.8   | 362    | 32   | 17   | 9.4   | 8.0   | 5.3   |
| 27          | 9.8   | 7.7     | 5.3   | 4.8   | 5.6   | 7.3   | 384    | 35   | 16   | 9.2   | 6.6   | 5.3   |
| 28          | 9.3   | 7.4     | 5.3   | 4.7   | 5.8   | 7.0   | 314    | 62   | 16   | 11    | 6.1   | 5.3   |
| 29          | 8.8   | 7.4     | 5.3   | 4.5   | ---   | 6.7   | 268    | 50   | 16   | 9.3   | 5.8   | 5.3   |
| 30          | 8.6   | 7.3     | 5.3   | 5.1   | ---   | 7.3   | 294    | 37   | 15   | 8.9   | 5.8   | 5.3   |
| 31          | 8.3   | ---     | 5.3   | 5.1   | ---   | 7.7   | ---    | 32   | ---  | 8.5   | 5.8   | ---   |
| TOTAL       | 298.6 | 217.3   | 187.9 | 158.6 | 149.1 | 249.5 | 3179.9 | 2627 | 697  | 378.6 | 216.3 | 174.6 |
| MEAN        | 9.63  | 7.24    | 6.06  | 5.12  | 5.32  | 8.05  | 106    | 84.7 | 23.2 | 12.2  | 6.98  | 5.82  |
| MAX         | 21    | 8.2     | 7.5   | 5.6   | 5.8   | 10    | 384    | 250  | 47   | 17    | 8.6   | 7.8   |
| MIN         | 6.9   | 5.7     | 5.3   | 4.5   | 5.0   | 5.7   | 8.3    | 32   | 15   | 8.5   | 5.8   | 5.3   |
| AC-FT       | 592   | 431     | 373   | 315   | 296   | 495   | 6310   | 5210 | 1380 | 751   | 429   | 346   |
| CAL YR 1986 | TOTAL | 10563.6 |       | MEAN  | 28.9  | MAX   | 385    | MIN  | 4.8  | AC-FT | 20950 |       |
| WTR YR 1987 | TOTAL | 8534.4  |       | MEAN  | 23.4  | MAX   | 384    | MIN  | 4.5  | AC-FT | 16930 |       |

## 06309450 BEAVER CREEK BELOW BAYER CREEK, NEAR BARNUM, WY

LOCATION.--Lat 43°39'55", long 107°03'48", in SE1/4 SE1/4 NW1/4 sec.28, T.43 N., R.85 W., Johnson County, Hydrologic Unit 10090201, on left bank 0.2 mi downstream from Bayer Creek and 7.7 mi west of Barnum.

DRAINAGE AREA.--10.9 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR WY-79-1: 1975.

GAGE.--Water-stage recorder. Elevation of gage is 7,030 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Mar. 30, 1978, at site 300 ft downstream at datum 3.95 ft lower.

REMARKS.--Estimated daily discharges: Nov. 8-14, Dec. 8-11, Jan. 20, 21, 28-31, Feb. 1-4, 21, 23, 24, 28, and Mar. 1, 4, 18, 20-23, 26, 27, 29, 30. Records good except November to March, which are fair. No diversion upstream from station.

AVERAGE DISCHARGE.--13 years, 6.91 ft<sup>3</sup>/s, 5,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 186 ft<sup>3</sup>/s, July 6, 1978, gage height, 2.72 ft; maximum gage height, 3.19 ft, Apr. 20, 1984 (backwater from snow); minimum daily discharge, 0.80 ft<sup>3</sup>/s, Dec. 30, 31, 1974, Jan. 2, 10-12, 1975, Feb. 10, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Mar. 27 | 0330 | ice jam                           | *2.14               | Apr. 26 | 1930 | *61                               | 1.94                |
| Apr. 17 | 2030 | 50                                | 1.79                | May 2   | 0130 | 60                                | 1.93                |

Minimum daily discharge, 1.2 ft<sup>3</sup>/s, Nov. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR   | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------------|-------|--------|------|------|------|------|-------|------|-------|-------|-------|-------|
| 1           | 3.2   | 2.7    | 2.6  | 1.7  | 1.8  | 1.8  | 1.9   | 22   | 11    | 7.1   | 4.7   | 3.7   |
| 2           | 3.4   | 2.6    | 2.6  | 1.8  | 1.8  | 1.8  | 1.9   | 34   | 11    | 7.1   | 4.6   | 3.8   |
| 3           | 3.2   | 2.6    | 2.6  | 1.8  | 1.7  | 1.6  | 2.0   | 21   | 11    | 7.2   | 4.6   | 3.5   |
| 4           | 3.5   | 2.6    | 2.5  | 1.8  | 1.7  | 1.6  | 2.6   | 19   | 10    | 7.3   | 4.5   | 4.6   |
| 5           | 4.4   | 2.5    | 2.6  | 1.8  | 1.7  | 2.2  | 3.5   | 19   | 9.9   | 7.1   | 4.4   | 3.9   |
| 6           | 3.6   | 1.7    | 2.6  | 1.7  | 1.7  | 2.9  | 4.1   | 19   | 9.8   | 6.9   | 4.5   | 3.5   |
| 7           | 3.0   | 1.2    | 2.6  | 1.8  | 1.7  | 3.3  | 4.5   | 19   | 13    | 6.8   | 4.7   | 3.7   |
| 8           | 2.8   | 1.3    | 2.5  | 1.8  | 1.7  | 2.5  | 5.6   | 18   | 15    | 6.7   | 4.6   | 3.5   |
| 9           | 2.8   | 1.9    | 2.4  | 1.8  | 1.7  | 2.2  | 4.6   | 18   | 13    | 6.9   | 4.1   | 3.4   |
| 10          | 2.8   | 1.8    | 2.3  | 1.8  | 1.7  | 2.2  | 4.3   | 17   | 12    | 7.3   | 4.0   | 3.3   |
| 11          | 2.9   | 2.3    | 2.5  | 1.9  | 1.8  | 2.2  | 5.3   | 17   | 10    | 8.0   | 4.1   | 3.3   |
| 12          | 2.8   | 2.5    | 2.5  | 1.9  | 1.8  | 2.3  | 5.2   | 16   | 9.9   | 6.8   | 4.1   | 3.2   |
| 13          | 3.2   | 2.8    | 2.5  | 1.9  | 1.8  | 3.1  | 4.1   | 15   | 9.6   | 6.4   | 4.1   | 3.3   |
| 14          | 3.3   | 3.2    | 2.5  | 1.9  | 1.8  | 2.9  | 5.3   | 15   | 10    | 6.2   | 4.1   | 3.2   |
| 15          | 3.1   | 3.0    | 2.4  | 1.9  | 1.8  | 2.6  | 9.3   | 15   | 10    | 6.0   | 4.3   | 3.3   |
| 16          | 3.0   | 2.8    | 2.3  | 1.8  | 1.8  | 2.5  | 13    | 16   | 9.4   | 5.9   | 4.1   | 3.9   |
| 17          | 2.8   | 2.7    | 2.3  | 1.8  | 1.8  | 2.4  | 24    | 17   | 9.1   | 6.3   | 4.0   | 3.8   |
| 18          | 2.8   | 2.6    | 2.2  | 1.8  | 1.7  | 2.3  | 30    | 16   | 9.0   | 6.2   | 3.9   | 3.4   |
| 19          | 2.8   | 2.3    | 2.2  | 1.8  | 1.7  | 2.5  | 19    | 14   | 8.7   | 5.8   | 3.9   | 3.4   |
| 20          | 3.3   | 2.8    | 2.1  | 1.5  | 1.7  | 2.3  | 11    | 15   | 8.5   | 5.6   | 3.8   | 3.4   |
| 21          | 3.1   | 2.7    | 2.1  | 1.7  | 1.7  | 2.0  | 11    | 14   | 8.3   | 5.6   | 3.7   | 3.4   |
| 22          | 7.3   | 2.6    | 2.1  | 2.0  | 1.7  | 2.2  | 17    | 13   | 8.4   | 5.7   | 3.8   | 3.1   |
| 23          | 5.0   | 2.6    | 2.1  | 1.7  | 1.6  | 2.6  | 24    | 13   | 8.2   | 5.1   | 3.8   | 2.9   |
| 24          | 3.6   | 2.7    | 2.0  | 1.7  | 1.6  | 2.9  | 27    | 14   | 8.0   | 5.1   | 3.9   | 3.1   |
| 25          | 3.3   | 2.5    | 1.9  | 1.7  | 1.8  | 2.6  | 28    | 13   | 7.8   | 5.0   | 4.0   | 3.2   |
| 26          | 3.0   | 2.6    | 1.9  | 1.7  | 1.8  | 2.1  | 32    | 12   | 7.6   | 4.9   | 4.4   | 3.1   |
| 27          | 2.9   | 2.8    | 1.9  | 1.7  | 1.7  | 1.9  | 29    | 15   | 7.4   | 5.0   | 3.9   | 3.1   |
| 28          | 2.8   | 2.8    | 1.8  | 1.6  | 1.6  | 1.8  | 24    | 19   | 7.4   | 5.4   | 3.7   | 3.1   |
| 29          | 2.8   | 2.6    | 1.8  | 1.5  | ---  | 1.7  | 23    | 20   | 7.5   | 5.5   | 3.7   | 3.0   |
| 30          | 2.8   | 2.6    | 1.8  | 1.7  | ---  | 1.7  | 23    | 13   | 7.2   | 5.0   | 3.8   | 3.0   |
| 31          | 2.8   | ---    | 1.8  | 1.8  | ---  | 1.9  | ---   | 12   | ---   | 4.8   | 3.7   | ---   |
| TOTAL       | 102.1 | 74.4   | 70.0 | 54.8 | 48.4 | 70.6 | 399.2 | 520  | 287.7 | 190.7 | 127.5 | 102.1 |
| MEAN        | 3.29  | 2.48   | 2.26 | 1.77 | 1.73 | 2.28 | 13.3  | 16.8 | 9.59  | 6.15  | 4.11  | 3.40  |
| MAX         | 7.3   | 3.2    | 2.6  | 2.0  | 1.8  | 3.3  | 32    | 34   | 15    | 8.0   | 4.7   | 4.6   |
| MIN         | 2.8   | 1.2    | 1.8  | 1.5  | 1.6  | 1.6  | 1.9   | 12   | 7.2   | 4.8   | 3.7   | 2.9   |
| AC-FT       | 203   | 148    | 139  | 109  | 96   | 140  | 792   | 1030 | 571   | 378   | 253   | 203   |
| CAL YR 1986 | TOTAL | 2050.2 |      | MEAN | 5.62 | MAX  | 25    | MIN  | 1.1   | AC-FT | 4070  |       |
| WTR YR 1987 | TOTAL | 2047.5 |      | MEAN | 5.61 | MAX  | 34    | MIN  | 1.2   | AC-FT | 4060  |       |



## YELLOWSTONE RIVER BASIN

06309460 BEAVER CREEK ABOVE WHITE PANTHER DITCH, NEAR BARNUM, WY

LOCATION.--Lat 43°41'52", long 106°56'52", in SE1/4 SW1/4 NW1/4 sec.16, T.43 N., R.84 W., Johnson County,  
Hydrologic Unit 10090201, on right bank 0.1 mi upstream from White Panther Ditch and 3.0 mi northwest of Barnum.

DRAINAGE AREA.--24.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR WY-78-1: 1975-77(M). WDR WY-79-1: 1975. WDR WY-83: 1979, 1982(M).

GAGE.--Water-stage recorder. Elevation of gage is 5,350 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No diversion upstream from station.

AVERAGE DISCHARGE.--13 years, 14.5 ft<sup>3</sup>/s, 10,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 797 ft<sup>3</sup>/s, July 6, 1978, gage height, 5.94 ft, from floodmarks,  
from rating curve extended above 140 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow; minimum daily,  
5.2 ft<sup>3</sup>/s, Mar. 21, Apr. 8, 1982.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 70 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                 | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------------------------------------|------|-----------------------------------|---------------------|
| Apr. 26 | 2200 | *60                               | *1.02               | No peak greater than base discharge. |      |                                   |                     |

Minimum daily discharge, 6.1 ft<sup>3</sup>/s, Mar. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| 1           | 10    | 9.3    | 8.1   | 8.3   | 8.1   | 7.8   | 9.0   | 32   | 19   | 13    | 11    | 9.6   |
| 2           | 12    | 9.0    | 9.0   | 8.6   | 8.1   | 8.0   | 8.4   | 44   | 18   | 13    | 11    | 9.6   |
| 3           | 11    | 9.3    | 9.0   | 8.5   | 8.1   | 8.0   | 8.7   | 34   | 18   | 13    | 11    | 9.5   |
| 4           | 11    | 9.2    | 7.3   | 8.6   | 8.0   | 8.0   | 9.4   | 31   | 17   | 13    | 11    | 11    |
| 5           | 12    | 9.1    | 9.7   | 8.6   | 7.8   | 8.4   | 10    | 30   | 16   | 13    | 11    | 11    |
| 6           | 12    | 8.8    | 9.4   | 8.6   | 7.8   | 9.6   | 12    | 29   | 16   | 13    | 11    | 9.8   |
| 7           | 11    | 6.6    | 8.9   | 8.5   | 7.8   | 10    | 12    | 27   | 17   | 13    | 12    | 10    |
| 8           | 11    | 6.5    | 8.2   | 8.5   | 7.9   | 10    | 13    | 27   | 25   | 13    | 12    | 9.9   |
| 9           | 10    | 8.0    | 7.5   | 8.4   | 7.9   | 8.8   | 13    | 26   | 21   | 13    | 11    | 9.7   |
| 10          | 10    | 8.5    | 7.9   | 8.5   | 7.9   | 8.7   | 11    | 26   | 20   | 14    | 11    | 9.7   |
| 11          | 11    | 9.3    | 9.4   | 8.6   | 7.9   | 8.6   | 12    | 26   | 17   | 14    | 11    | 9.7   |
| 12          | 10    | 9.6    | 9.4   | 8.4   | 8.0   | 8.5   | 13    | 25   | 17   | 13    | 11    | 9.4   |
| 13          | 10    | 9.9    | 9.1   | 8.3   | 8.0   | 9.1   | 11    | 24   | 16   | 13    | 11    | 9.4   |
| 14          | 10    | 9.9    | 8.9   | 8.3   | 8.2   | 9.7   | 11    | 24   | 17   | 12    | 11    | 9.3   |
| 15          | 10    | 9.9    | 8.9   | 8.3   | 8.0   | 9.3   | 16    | 23   | 16   | 12    | 11    | 9.3   |
| 16          | 9.5   | 9.5    | 8.7   | 8.2   | 8.0   | 9.1   | 22    | 24   | 16   | 12    | 11    | 10    |
| 17          | 9.4   | 9.5    | 8.7   | 8.2   | 8.0   | 8.7   | 31    | 25   | 15   | 12    | 11    | 10    |
| 18          | 9.3   | 9.2    | 8.7   | 8.4   | 8.0   | 8.4   | 39    | 24   | 15   | 13    | 11    | 9.6   |
| 19          | 9.3   | 9.3    | 8.7   | 8.6   | 8.0   | 8.8   | 32    | 23   | 15   | 12    | 10    | 9.4   |
| 20          | 10    | 9.0    | 8.6   | 8.4   | 7.7   | 8.0   | 21    | 23   | 15   | 12    | 10    | 9.3   |
| 21          | 9.9   | 9.6    | 8.5   | 8.4   | 8.0   | 6.2   | 19    | 23   | 14   | 12    | 10    | 9.3   |
| 22          | 15    | 9.3    | 8.6   | 8.4   | 7.7   | 6.1   | 24    | 22   | 14   | 12    | 11    | 8.9   |
| 23          | 14    | 8.6    | 8.6   | 8.3   | 8.1   | 8.0   | 32    | 21   | 14   | 12    | 11    | 8.7   |
| 24          | 11    | 8.5    | 8.5   | 8.2   | 7.8   | 9.4   | 36    | 21   | 14   | 11    | 11    | 8.6   |
| 25          | 9.9   | 9.7    | 8.5   | 8.1   | 8.2   | 9.2   | 37    | 21   | 14   | 11    | 11    | 8.6   |
| 26          | 9.7   | 8.6    | 8.6   | 8.0   | 8.1   | 8.9   | 39    | 19   | 13   | 11    | 11    | 8.5   |
| 27          | 9.4   | 9.5    | 8.7   | 8.0   | 8.1   | 8.6   | 38    | 20   | 13   | 11    | 10    | 8.6   |
| 28          | 9.4   | 9.2    | 8.5   | 8.0   | 7.8   | 9.0   | 34    | 27   | 13   | 11    | 9.9   | 8.7   |
| 29          | 9.3   | 9.1    | 8.5   | 7.6   | ---   | 8.3   | 33    | 27   | 14   | 12    | 9.8   | 8.6   |
| 30          | 9.4   | 9.1    | 8.6   | 8.3   | ---   | 8.5   | 33    | 21   | 13   | 12    | 9.8   | 8.6   |
| 31          | 9.4   | ---    | 8.5   | 8.2   | ---   | 9.0   | ---   | 19   | ---  | 11    | 9.7   | ---   |
| TOTAL       | 324.9 | 270.6  | 268.2 | 258.3 | 223.0 | 266.7 | 639.5 | 788  | 482  | 382   | 334.2 | 282.3 |
| MEAN        | 10.5  | 9.02   | 8.65  | 8.33  | 7.96  | 8.60  | 21.3  | 25.4 | 16.1 | 12.3  | 10.8  | 9.41  |
| MAX         | 15    | 9.9    | 9.7   | 8.6   | 8.2   | 10    | 39    | 44   | 25   | 14    | 12    | 11    |
| MIN         | 9.3   | 6.5    | 7.3   | 7.6   | 7.7   | 6.1   | 8.4   | 19   | 13   | 11    | 9.7   | 8.5   |
| AC-FT       | 644   | 537    | 532   | 512   | 442   | 529   | 1270  | 1560 | 956  | 758   | 663   | 560   |
| CAL YR 1986 | TOTAL | 4350.8 |       | MEAN  | 11.9  | MAX   | 32    | MIN  | 6.5  | AC-FT | 8630  |       |
| WTR YR 1987 | TOTAL | 4519.7 |       | MEAN  | 12.4  | MAX   | 44    | MIN  | 6.1  | AC-FT | 8960  |       |

## 06309500 MIDDLE FORK POWDER RIVER ABOVE KAYCEE, WY

LOCATION.--Lat 43°38'51", long 106°48'29", in SW1/4 SW1/4 sec.34, T.43 N., R.83 W., Johnson County, Hydrologic Unit 10090201, on right bank 680 ft upstream from bridge on county road, 3.5 mi upstream from Red Fork Powder River, 4 mi downstream from Beaver Creek, and 10 mi southwest of Kaycee.

DRAINAGE AREA.--450 mi<sup>2</sup>, approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1949 to September 1970, April 1984 to current year.

REVISED RECORDS.--WSP 1916: 1955, 1957(P), 1958, 1959(P).

GAGE.--Water-stage recorder. Datum of gage is 4,874.76 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 8-18, Dec. 2 to Feb. 8, Feb. 24-28, Mar. 1, 29, and May 20 to June 21. Records good except those for estimated daily discharges, which are poor. Diversions for irrigation upstream from station (for details on adjudication, see Remarks for this station in WSP 1209).

AVERAGE DISCHARGE.--24 years (water years 1950-70, 1985-87), 70.8 ft<sup>3</sup>/s, 51,290 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,750 ft<sup>3</sup>/s, June 8, 1968, gage height, 8.74 ft; minimum daily, 12 ft<sup>3</sup>/s, Aug. 28, 29, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage for undetermined period, about 11.7 ft, date unknown.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Oct. 22 | 1500 | 382                               | 3.91                | June 7  | 2130 | *841                              | a*5.70              |
| Mar. 6  | 0500 | 309                               | 3.53                | July 29 | 2300 | 740                               | 5.35                |
| Apr. 27 | 0300 | 701                               | 5.20                | Aug. 7  | 1900 | 419                               | 4.08                |

a Maximum from float tape indicator

Minimum daily discharge, 30 ft<sup>3</sup>/s, Aug. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL   | AUG   | SEP  |
|-------------|-------|-------|------|------|------|------|------|------|------|-------|-------|------|
| 1           | 48    | 51    | 46   | 49   | 49   | 40   | 53   | 372  | 91   | 54    | 44    | 37   |
| 2           | 62    | 49    | 48   | 49   | 50   | 43   | 48   | 352  | 85   | 52    | 39    | 37   |
| 3           | 65    | 51    | 46   | 50   | 49   | 48   | 50   | 290  | 81   | 73    | 36    | 33   |
| 4           | 56    | 50    | 46   | 52   | 46   | 62   | 53   | 237  | 76   | 60    | 34    | 36   |
| 5           | 55    | 52    | 49   | 52   | 47   | 101  | 57   | 219  | 73   | 55    | 32    | 42   |
| 6           | 56    | 53    | 48   | 52   | 50   | 205  | 60   | 215  | 68   | 49    | 31    | 39   |
| 7           | 53    | 47    | 47   | 50   | 50   | 187  | 64   | 201  | 123  | 49    | 70    | 40   |
| 8           | 51    | 45    | 46   | 48   | 49   | 92   | 67   | 187  | 235  | 49    | 49    | 44   |
| 9           | 51    | 42    | 44   | 47   | 48   | 65   | 72   | 167  | 120  | 49    | 33    | 50   |
| 10          | 50    | 34    | 40   | 47   | 46   | 60   | 63   | 162  | 112  | 49    | 30    | 44   |
| 11          | 52    | 39    | 44   | 48   | 45   | 57   | 63   | 153  | 95   | 55    | 31    | 40   |
| 12          | 49    | 41    | 47   | 49   | 45   | 54   | 75   | 144  | 84   | 58    | 36    | 39   |
| 13          | 49    | 46    | 48   | 50   | 45   | 56   | 66   | 131  | 78   | 54    | 38    | 34   |
| 14          | 51    | 50    | 50   | 49   | 47   | 59   | 63   | 121  | 89   | 55    | 34    | 33   |
| 15          | 50    | 53    | 50   | 48   | 46   | 56   | 73   | 109  | 104  | 54    | 42    | 33   |
| 16          | 49    | 54    | 49   | 47   | 43   | 61   | 97   | 141  | 93   | 49    | 43    | 37   |
| 17          | 48    | 55    | 49   | 46   | 42   | 59   | 121  | 152  | 82   | 54    | 37    | 52   |
| 18          | 48    | 54    | 48   | 47   | 42   | 53   | 174  | 144  | 75   | 57    | 35    | 46   |
| 19          | 48    | 54    | 48   | 46   | 43   | 54   | 236  | 117  | 69   | 50    | 32    | 45   |
| 20          | 51    | 51    | 48   | 46   | 42   | 57   | 170  | 102  | 66   | 48    | 36    | 46   |
| 21          | 54    | 54    | 48   | 45   | 41   | 50   | 146  | 94   | 63   | 47    | 39    | 44   |
| 22          | 178   | 54    | 49   | 44   | 42   | 48   | 150  | 87   | 62   | 46    | 40    | 43   |
| 23          | 109   | 49    | 49   | 45   | 45   | 51   | 203  | 84   | 62   | 39    | 41    | 43   |
| 24          | 74    | 51    | 49   | 46   | 43   | 53   | 304  | 85   | 60   | 37    | 41    | 43   |
| 25          | 63    | 52    | 48   | 47   | 42   | 52   | 367  | 100  | 59   | 34    | 49    | 42   |
| 26          | 59    | 47    | 47   | 48   | 40   | 51   | 420  | 89   | 57   | 33    | 42    | 42   |
| 27          | 55    | 52    | 48   | 48   | 38   | 53   | 518  | 86   | 54   | 31    | 40    | 43   |
| 28          | 54    | 50    | 48   | 49   | 37   | 51   | 438  | 172  | 53   | 60    | 37    | 43   |
| 29          | 53    | 50    | 48   | 47   | ---  | 48   | 376  | 140  | 53   | 99    | 34    | 44   |
| 30          | 52    | 51    | 49   | 48   | ---  | 51   | 358  | 102  | 53   | 99    | 38    | 45   |
| 31          | 52    | ---   | 48   | 48   | ---  | 53   | ---  | 91   | ---  | 55    | 37    | ---  |
| TOTAL       | 1845  | 1481  | 1472 | 1487 | 1252 | 2030 | 5005 | 4846 | 2475 | 1653  | 1200  | 1239 |
| MEAN        | 59.5  | 49.4  | 47.5 | 48.0 | 44.7 | 65.5 | 167  | 156  | 82.5 | 53.3  | 38.7  | 41.3 |
| MAX         | 178   | 55    | 50   | 52   | 50   | 205  | 518  | 372  | 235  | 99    | 70    | 52   |
| MIN         | 48    | 34    | 40   | 44   | 37   | 40   | 48   | 84   | 53   | 31    | 30    | 33   |
| AC-FT       | 3660  | 2940  | 2920 | 2950 | 2480 | 4030 | 9930 | 9610 | 4910 | 3280  | 2380  | 2460 |
| CAL YR 1986 | TOTAL | 26287 |      | MEAN | 72.0 | MAX  | 464  | MIN  | 26   | AC-FT | 52140 |      |
| WTR YR 1987 | TOTAL | 25985 |      | MEAN | 71.2 | MAX  | 518  | MIN  | 30   | AC-FT | 51540 |      |

## YELLOWSTONE RIVER BASIN

06309500 MIDDLE FORK POWDER RIVER ABOVE KAYCEE, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-54, May 1984 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | TUR-<br>BID-<br>ITY<br>(NTU) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) |
|-----------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------|
| OCT 08... | 1130 | 52                                              | 900                                               | 8.5                            | 9.5                                  | 640                                                  | 45                           | 10.2                                | 107                                                            | K13                                                            | 460                                    |
| NOV 20... | 1030 | 50                                              | 950                                               | 8.6                            | 2.0                                  | 630                                                  | --                           | 12.4                                | 109                                                            | K7                                                             | 490                                    |
| JAN 13... | 1300 | 48                                              | 990                                               | 8.5                            | 0.5                                  | 630                                                  | 40                           | 13.0                                | 110                                                            | K8                                                             | 500                                    |
| FEB 19... | 1000 | 43                                              | 960                                               | 8.7                            | 1.0                                  | 640                                                  | 55                           | 11.3                                | 95                                                             | K4                                                             | 470                                    |
| APR 02... | 1230 | 45                                              | 1000                                              | 8.2                            | 7.0                                  | 650                                                  | 50                           | 12.8                                | 124                                                            | <1                                                             | 510                                    |
| 27...     | 0930 | 581                                             | 233                                               | 7.9                            | 5.5                                  | 643                                                  | 750                          | 10.4                                | 98                                                             | 170                                                            | 110                                    |
| MAY 19... | 1130 | 118                                             | 655                                               | 8.1                            | 15.0                                 | 626                                                  | 320                          | 7.4                                 | 90                                                             | 430                                                            | 320                                    |
| JUN 22... | 1530 | 61                                              | 750                                               | 8.3                            | 17.0                                 | 630                                                  | 45                           | 8.8                                 | 111                                                            | K190                                                           | 370                                    |
| AUG 06... | 1200 | 30                                              | 950                                               | 7.9                            | 18.0                                 | 640                                                  | 45                           | 8.5                                 | 108                                                            | 150                                                            | 460                                    |
| SEP 22... | 1020 | 42                                              | 995                                               | 8.3                            | 10.0                                 | 638                                                  | 25                           | 10.0                                | 106                                                            | 57                                                             | 520                                    |

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

| DATE      | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) |
|-----------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|
| OCT 08... | 120                                          | 38                                                   | 21                                           | 0.4                                     | 1.4                                                 | 180                                             | 280                                           | 10                                                  | 0.3                                                | 8.2                                               |
| NOV 20... | 120                                          | 47                                                   | 26                                           | 0.5                                     | 1.3                                                 | 190                                             | 310                                           | 12                                                  | 0.2                                                | 9.3                                               |
| JAN 13... | 130                                          | 42                                                   | 24                                           | 0.5                                     | 2.0                                                 | 180                                             | 320                                           | 12                                                  | 0.4                                                | 9.6                                               |
| FEB 19... | 120                                          | 41                                                   | 24                                           | 0.5                                     | 1.7                                                 | 180                                             | 320                                           | 11                                                  | 0.3                                                | 11                                                |
| APR 02... | 130                                          | 46                                                   | 30                                           | 0.6                                     | 2.1                                                 | 170                                             | 350                                           | 20                                                  | 0.3                                                | 11                                                |
| 27...     | 29                                           | 8.6                                                  | 6.1                                          | 0.3                                     | 1.1                                                 | 64                                              | 49                                            | 1.9                                                 | 0.1                                                | 6.9                                               |
| MAY 19... | 85                                           | 26                                                   | 16                                           | 0.4                                     | 1.9                                                 | 120                                             | 200                                           | 7.3                                                 | 0.2                                                | 10                                                |
| JUN 22... | 93                                           | 33                                                   | 20                                           | 0.5                                     | 2.0                                                 | 160                                             | 240                                           | 9.8                                                 | 0.2                                                | 8.9                                               |
| AUG 06... | 120                                          | 39                                                   | 26                                           | 0.5                                     | 2.1                                                 | 160                                             | 320                                           | 11                                                  | 0.2                                                | 8.0                                               |
| SEP 22... | 140                                          | 42                                                   | 26                                           | 0.5                                     | 2.3                                                 | 170                                             | 370                                           | 12                                                  | 0.3                                                | 7.7                                               |

| DATE      | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|-----------|--------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT 08... | 628                                                                | 590                                                            | 0.85                                                | 88                                                | 0.2                                                  | 0.2                                                           | <0.01                                                | --                                                   | 0.9                                                                | 0.05                                        |
| NOV 20... | 696                                                                | 640                                                            | 0.95                                                | 94                                                | 0.5                                                  | 0.4                                                           | 0.03                                                 | 0.27                                                 | 0.3                                                                | 0.03                                        |
| JAN 13... | 680                                                                | 650                                                            | 0.92                                                | 88                                                | 0.6                                                  | 0.6                                                           | 0.05                                                 | 0.65                                                 | 0.7                                                                | 0.09                                        |
| FEB 19... | 692                                                                | 640                                                            | 0.94                                                | 80                                                | 0.5                                                  | 0.5                                                           | 0.05                                                 | 0.35                                                 | 0.4                                                                | 0.02                                        |
| APR 02... | 700                                                                | 690                                                            | 0.95                                                | 85                                                | 0.4                                                  | 0.4                                                           | 0.05                                                 | 0.65                                                 | 0.7                                                                | 0.06                                        |
| 27...     | 152                                                                | 140                                                            | 0.21                                                | 238                                               | 0.2                                                  | 0.2                                                           | 0.04                                                 | 1.3                                                  | 1.3                                                                | 0.09                                        |
| MAY 19... | 420                                                                | 420                                                            | 0.57                                                | 134                                               | 0.2                                                  | 0.2                                                           | 0.05                                                 | 0.65                                                 | 0.7                                                                | 0.47                                        |
| JUN 22... | 592                                                                | 500                                                            | 0.81                                                | 98                                                | <0.1                                                 | <0.1                                                          | 0.04                                                 | 0.56                                                 | 0.6                                                                | 0.07                                        |
| AUG 06... | 668                                                                | 620                                                            | 0.91                                                | 54                                                | <0.1                                                 | 0.1                                                           | 0.03                                                 | 0.87                                                 | 0.9                                                                | 0.07                                        |
| SEP 22... | 716                                                                | 700                                                            | 0.97                                                | 81                                                | 0.1                                                  | 0.1                                                           | 0.02                                                 | 0.38                                                 | 0.4                                                                | 0.05                                        |

## 06311000 NORTH FORK POWDER RIVER NEAR HAZELTON, WY

LOCATION.--Lat 44°01'40", long 107°04'49", in SW1/4 SE1/4 NW1/4 sec.21, T.47 N., R.85 W., Johnson County, Hydrologic Unit 10090201, on left bank 0.6 mi downstream from Twin Creek, 0.5 mi upstream from Dullknife Reservoir, 7.2 mi southwest of Hazelton, and 19 mi northwest of Mayoworth.

DRAINAGE AREA.--24.5 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1946 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1279: 1947-48(M), 1949, 1950-51(M), 1952.

GAGE.--Water-stage recorder. Elevation of gage is 8,180 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1966, at site 0.7 mi downstream at different datum. Oct. 1, 1966 to Aug. 26, 1986, at site 0.1 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 12-18, 31, Nov. 1-15, 29, 30, Dec. 1-8, 27-31, Jan. 1 to Feb. 4, Mar. 9-25, 28-31, and Apr. 1-12, 15-23. Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

AVERAGE DISCHARGE.--41 years, 14.8 ft<sup>3</sup>/s, 10,720 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 886 ft<sup>3</sup>/s, June 15, 1953, gage height, 4.34 ft, site and datum then in use, from rating curve extended above 110 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow; maximum gage height, 6.21 ft, May 14, 1984 (backwater from ice) site and datum then in use; minimum daily discharge, 0.60 ft<sup>3</sup>/s, Oct. 30, 1960, Apr. 9, 12, 15-17, 1961, but may have been less during winter months of water years 1947-48.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 190 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| Apr. 18 | 1445 | ice jam                        | *4.68            | No other peak greater than base discharge. |      |                                |                  |
| Apr. 27 | 2000 | *248                           | 3.77             |                                            |      |                                |                  |

Minimum daily discharge, 2.0 ft<sup>3</sup>/s, Mar. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN  | FEB  | MAR  | APR    | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|--------|-------|------|------|------|--------|------|------|-------|-------|-------|
| 1           | 5.5   | 4.8    | 3.7   | 2.9  | 2.7  | 2.5  | 2.3    | 40   | 51   | 17    | 12    | 6.7   |
| 2           | 5.7   | 4.7    | 3.6   | 2.9  | 2.7  | 2.3  | 2.2    | 49   | 42   | 16    | 11    | 6.6   |
| 3           | 5.3   | 5.0    | 3.6   | 3.0  | 2.7  | 2.3  | 2.4    | 35   | 37   | 17    | 11    | 6.6   |
| 4           | 5.2   | 5.2    | 3.5   | 3.1  | 2.6  | 2.3  | 2.5    | 30   | 35   | 17    | 10    | 8.9   |
| 5           | 5.7   | 5.0    | 3.6   | 3.0  | 2.6  | 2.3  | 2.6    | 28   | 32   | 20    | 9.8   | 13    |
| 6           | 6.6   | 4.7    | 3.6   | 3.0  | 2.6  | 2.3  | 2.7    | 29   | 31   | 15    | 9.6   | 8.4   |
| 7           | 7.9   | 4.2    | 3.6   | 2.8  | 2.6  | 2.3  | 2.6    | 27   | 37   | 14    | 9.9   | 19    |
| 8           | 6.7   | 3.4    | 3.6   | 2.8  | 2.6  | 2.3  | 2.7    | 26   | 113  | 14    | 12    | 12    |
| 9           | 6.3   | 3.2    | 3.6   | 2.8  | 2.6  | 2.3  | 2.7    | 26   | 63   | 16    | 10    | 8.3   |
| 10          | 6.8   | 3.4    | 3.6   | 2.8  | 2.6  | 2.3  | 2.6    | 26   | 64   | 32    | 9.1   | 8.1   |
| 11          | 6.2   | 3.7    | 3.6   | 3.0  | 2.6  | 2.4  | 2.6    | 26   | 43   | 59    | 8.7   | 7.5   |
| 12          | 5.7   | 3.9    | 3.6   | 3.1  | 2.6  | 2.4  | 2.7    | 24   | 37   | 26    | 8.7   | 6.9   |
| 13          | 5.9   | 4.0    | 3.6   | 2.9  | 2.6  | 2.5  | 2.9    | 24   | 34   | 18    | 8.5   | 6.6   |
| 14          | 6.4   | 4.2    | 3.6   | 2.8  | 2.5  | 2.6  | 2.9    | 22   | 34   | 15    | 8.4   | 6.4   |
| 15          | 6.5   | 4.3    | 3.6   | 2.7  | 2.5  | 2.5  | 4.3    | 22   | 33   | 14    | 12    | 7.7   |
| 16          | 6.3   | 4.5    | 3.4   | 2.7  | 2.5  | 2.4  | 13     | 22   | 30   | 13    | 12    | 15    |
| 17          | 5.8   | 4.6    | 3.4   | 2.8  | 2.5  | 2.3  | 37     | 29   | 28   | 15    | 8.9   | 14    |
| 18          | 5.4   | 4.4    | 3.2   | 2.9  | 2.5  | 2.3  | 70     | 25   | 26   | 24    | 8.3   | 9.4   |
| 19          | 4.9   | 4.4    | 3.2   | 2.8  | 2.5  | 2.3  | 41     | 22   | 41   | 14    | 7.8   | 8.0   |
| 20          | 9.4   | 4.4    | 3.1   | 2.7  | 2.5  | 2.3  | 26     | 24   | 31   | 12    | 7.8   | 7.4   |
| 21          | 11    | 4.4    | 3.1   | 2.8  | 2.5  | 2.3  | 29     | 26   | 26   | 12    | 7.4   | 7.0   |
| 22          | 9.1   | 4.4    | 3.1   | 2.9  | 2.5  | 2.2  | 58     | 22   | 24   | 13    | 8.5   | 6.9   |
| 23          | 11    | 4.2    | 3.1   | 2.9  | 2.5  | 2.1  | 93     | 19   | 25   | 11    | 8.3   | 6.6   |
| 24          | 7.9   | 4.2    | 3.1   | 2.9  | 2.5  | 2.2  | 124    | 21   | 23   | 10    | 9.3   | 6.4   |
| 25          | 6.5   | 4.2    | 2.9   | 2.8  | 2.5  | 2.2  | 129    | 29   | 21   | 9.9   | 11    | 6.3   |
| 26          | 5.8   | 3.9    | 2.9   | 2.8  | 2.5  | 2.2  | 106    | 27   | 20   | 9.9   | 15    | 6.1   |
| 27          | 5.8   | 4.0    | 2.9   | 2.8  | 2.5  | 2.2  | 120    | 34   | 19   | 64    | 13    | 6.0   |
| 28          | 5.4   | 4.0    | 2.9   | 2.8  | 2.5  | 2.1  | 79     | 55   | 18   | 24    | 8.7   | 6.0   |
| 29          | 5.4   | 3.9    | 3.0   | 2.7  | ---  | 2.0  | 54     | 88   | 20   | 16    | 7.6   | 6.0   |
| 30          | 5.1   | 3.8    | 3.0   | 2.6  | ---  | 2.3  | 50     | 57   | 19   | 15    | 7.2   | 6.1   |
| 31          | 5.0   | ---    | 3.0   | 2.7  | ---  | 2.4  | ---    | 49   | ---  | 13    | 7.0   | ---   |
| TOTAL       | 202.2 | 127.0  | 103.3 | 88.2 | 71.6 | 71.4 | 1069.7 | 983  | 1057 | 585.8 | 298.5 | 249.9 |
| MEAN        | 6.52  | 4.23   | 3.33  | 2.85 | 2.56 | 2.30 | 35.7   | 31.7 | 35.2 | 18.9  | 9.63  | 8.33  |
| MAX         | 11    | 5.2    | 3.7   | 3.1  | 2.7  | 2.6  | 129    | 88   | 113  | 64    | 15    | 19    |
| MIN         | 4.9   | 3.2    | 2.9   | 2.6  | 2.5  | 2.0  | 2.2    | 19   | 18   | 9.9   | 7.0   | 6.0   |
| AC-FT       | 401   | 252    | 205   | 175  | 142  | 142  | 2120   | 1950 | 2100 | 1160  | 592   | 496   |
| CAL YR 1986 | TOTAL | 5545.5 |       | MEAN | 15.2 | MAX  | 181    | MIN  | 1.8  | AC-FT | 11000 |       |
| WTR YR 1987 | TOTAL | 4907.6 |       | MEAN | 13.4 | MAX  | 129    | MIN  | 2.0  | AC-FT | 9730  |       |

06311060 NORTH FORK POWDER RIVER BELOW BULL CREEK, NEAR HAZELTON, WY

LOCATION.--Lat 44°00'29", long 107°01'08", in NE1/4 SE1/4 SW1/4 sec.25, T.47 N., R.85 W., Johnson County, Hydrologic Unit 10090201, on right bank 60 ft downstream from Bull Creek, 2.1 mi downstream from Dullknife Reservoir, and 6.8 mi southwest of Hazelton.

DRAINAGE AREA.--32.3 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 7,840 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 11-13, 31, Nov. 1, 2, 4-15, 20, 23, 24, 26-28, Dec. 1 to Feb. 9, Feb. 16 to Mar. 25, Mar. 30, 31, and Apr. 1-12, 15-18. Records good except those for estimated daily discharges, which are poor. Flow regulated by Dullknife Reservoir 2.1 mi upstream, capacity, 4,350 acre-ft.

AVERAGE DISCHARGE.--13 years, 18.1 ft<sup>3</sup>/s, 13,110 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 458 ft<sup>3</sup>/s, May 27, 1983, gage height, 4.48 ft, from floodmarks; minimum daily, 0.50 ft<sup>3</sup>/s, Jan. 24-30, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 151 ft<sup>3</sup>/s, June 8, gage height, 3.48 ft; minimum daily, 1.0 ft<sup>3</sup>/s, Feb. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN  | FEB  | MAR  | APR   | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|---------|------|------|------|------|-------|------|------|-------|-------|-------|
| 1           | 3.4   | 2.7     | 1.9  | 1.5  | 1.3  | 1.1  | 2.3   | 50   | 59   | 18    | 12    | 21    |
| 2           | 3.4   | 2.7     | 1.7  | 1.5  | 1.4  | 1.2  | 2.4   | 60   | 50   | 16    | 12    | 21    |
| 3           | 3.7   | 2.8     | 1.6  | 1.6  | 1.4  | 1.2  | 2.5   | 48   | 44   | 17    | 12    | 22    |
| 4           | 3.6   | 2.9     | 1.5  | 1.7  | 1.4  | 1.3  | 2.7   | 40   | 40   | 17    | 12    | 23    |
| 5           | 3.4   | 2.9     | 1.4  | 1.6  | 1.4  | 1.4  | 2.8   | 35   | 37   | 21    | 12    | 27    |
| 6           | 3.1   | 2.8     | 1.5  | 1.5  | 1.3  | 1.6  | 3.0   | 33   | 35   | 16    | 12    | 34    |
| 7           | 3.0   | 2.5     | 1.4  | 1.4  | 1.3  | 1.8  | 3.1   | 33   | 40   | 15    | 17    | 35    |
| 8           | 3.0   | 2.1     | 1.3  | 1.3  | 1.3  | 1.6  | 3.2   | 30   | 120  | 14    | 24    | 34    |
| 9           | 3.0   | 1.7     | 1.2  | 1.3  | 1.3  | 1.6  | 3.4   | 30   | 78   | 16    | 24    | 34    |
| 10          | 3.1   | 1.4     | 1.1  | 1.4  | 1.3  | 1.6  | 3.5   | 30   | 82   | 33    | 24    | 34    |
| 11          | 3.1   | 1.6     | 1.2  | 1.4  | 1.3  | 1.7  | 3.4   | 30   | 53   | 71    | 24    | 34    |
| 12          | 2.9   | 1.6     | 1.3  | 1.4  | 1.3  | 1.9  | 3.1   | 28   | 45   | 43    | 24    | 28    |
| 13          | 3.4   | 1.7     | 1.4  | 1.3  | 1.3  | 2.0  | 3.1   | 27   | 40   | 33    | 24    | 19    |
| 14          | 3.1   | 1.8     | 1.4  | 1.3  | 1.3  | 2.1  | 3.9   | 26   | 39   | 32    | 22    | 19    |
| 15          | 2.8   | 1.8     | 1.5  | 1.2  | 1.3  | 2.0  | 5.6   | 25   | 40   | 32    | 17    | 20    |
| 16          | 2.5   | 1.9     | 1.5  | 1.1  | 1.3  | 2.0  | 10    | 26   | 35   | 31    | 17    | 21    |
| 17          | 2.4   | 1.9     | 1.5  | 1.2  | 1.3  | 1.9  | 20    | 32   | 31   | 32    | 17    | 20    |
| 18          | 2.5   | 2.0     | 1.5  | 1.2  | 1.3  | 2.1  | 24    | 30   | 30   | 32    | 17    | 14    |
| 19          | 2.5   | 2.0     | 1.5  | 1.1  | 1.2  | 2.2  | 15    | 26   | 43   | 30    | 16    | 1.5   |
| 20          | 3.9   | 2.0     | 1.5  | 1.1  | 1.2  | 2.3  | 7.7   | 26   | 39   | 30    | 16    | 1.3   |
| 21          | 3.2   | 2.0     | 1.5  | 1.1  | 1.2  | 2.4  | 7.6   | 32   | 30   | 30    | 16    | 1.2   |
| 22          | 4.3   | 2.1     | 1.6  | 1.2  | 1.2  | 2.4  | 17    | 26   | 27   | 30    | 24    | 1.2   |
| 23          | 4.2   | 2.2     | 1.6  | 1.2  | 1.2  | 2.3  | 23    | 23   | 27   | 29    | 32    | 1.2   |
| 24          | 3.0   | 2.3     | 1.6  | 1.2  | 1.2  | 2.3  | 18    | 24   | 25   | 26    | 32    | 1.2   |
| 25          | 2.8   | 2.3     | 1.6  | 1.2  | 1.1  | 2.2  | 14    | 34   | 23   | 20    | 33    | 1.2   |
| 26          | 2.6   | 2.4     | 1.6  | 1.3  | 1.1  | 2.2  | 12    | 31   | 21   | 20    | 32    | 1.2   |
| 27          | 2.5   | 2.5     | 1.6  | 1.3  | 1.1  | 2.0  | 9.9   | 39   | 20   | 28    | 32    | 1.2   |
| 28          | 2.4   | 2.5     | 1.6  | 1.3  | 1.0  | 2.0  | 31    | 60   | 19   | 24    | 28    | 1.3   |
| 29          | 2.4   | 2.3     | 1.6  | 1.3  | ---  | 1.9  | 63    | 104  | 20   | 21    | 21    | 1.3   |
| 30          | 2.6   | 2.0     | 1.7  | 1.3  | ---  | 2.0  | 57    | 70   | 20   | 21    | 21    | 1.3   |
| 31          | 2.8   | ---     | 1.6  | 1.3  | ---  | 2.2  | ---   | 59   | ---  | 18    | 21    | ---   |
| TOTAL       | 94.6  | 65.4    | 46.5 | 40.8 | 35.3 | 58.5 | 377.2 | 1167 | 1212 | 816   | 647   | 475.1 |
| MEAN        | 3.05  | 2.18    | 1.50 | 1.32 | 1.26 | 1.89 | 12.6  | 37.6 | 40.4 | 26.3  | 20.9  | 15.8  |
| MAX         | 4.3   | 2.9     | 1.9  | 1.7  | 1.4  | 2.4  | 63    | 104  | 120  | 71    | 33    | 35    |
| MIN         | 2.4   | 1.4     | 1.1  | 1.1  | 1.0  | 1.1  | 2.3   | 23   | 19   | 14    | 12    | 1.2   |
| AC-FT       | 188   | 130     | 92   | 81   | 70   | 116  | 748   | 2310 | 2400 | 1620  | 1280  | 942   |
| CAL YR 1986 | TOTAL | 5905.02 |      | MEAN | 16.2 | MAX  | 128   | MIN  | .56  | AC-FT | 11710 |       |
| WTR YR 1987 | TOTAL | 5035.4  |      | MEAN | 13.8 | MAX  | 120   | MIN  | 1.0  | AC-FT | 9990  |       |



06311400 NORTH FORK POWDER RIVER BELOW PASS CREEK, NEAR MAYOWORTH, WY

LOCATION.--Lat 43°54'41", long 106°53'20", in NW1/4 NE1/4 SE1/4 sec.36, T.46 N., R.84 W., Johnson County, Hydrologic Unit 10090201, on left bank 0.8 mi downstream from Pass Creek, 1.2 mi upstream from Hat Ranch, 7.2 mi northwest of Mayoworth, and 13 mi downstream from Dullknife Reservoir.

DRAINAGE AREA.--100 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,700 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 15, 1983, at site 60 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 9-13, Dec. 9, 10, Jan. 1, 15-18, 20, Feb. 21, 26-28, and Mar. 28-30. Records good except those for estimated daily discharges, which are poor. Some regulation for irrigation by Dullknife Reservoir 13 mi upstream, capacity, 4,350 acre-ft.

AVERAGE DISCHARGE.--14 years, 34.5 ft<sup>3</sup>/s, 25,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,590 ft<sup>3</sup>/s, Aug. 1, 1984, gage height, 8.89 ft, from floodmarks, from rating curve extended above 400 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow; minimum daily discharge, 13 ft<sup>3</sup>/s, Feb. 5, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 311 ft<sup>3</sup>/s, Apr. 17, gage height, 5.17 ft; minimum daily, 14 ft<sup>3</sup>/s, Nov. 10, Dec. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN   | JUL   | AUG  | SEP  |
|-------------|-------|-------|------|------|------|------|------|------|-------|-------|------|------|
| 1           | 19    | 18    | 17   | 17   | 17   | 17   | 17   | 72   | 70    | 27    | 30   | 35   |
| 2           | 19    | 18    | 17   | 17   | 17   | 17   | 17   | 79   | 64    | 26    | 29   | 35   |
| 3           | 19    | 18    | 17   | 17   | 17   | 17   | 17   | 75   | 58    | 26    | 28   | 35   |
| 4           | 19    | 18    | 15   | 17   | 17   | 17   | 17   | 62   | 53    | 25    | 27   | 38   |
| 5           | 19    | 18    | 17   | 17   | 17   | 20   | 17   | 55   | 51    | 26    | 27   | 37   |
| 6           | 19    | 19    | 18   | 17   | 17   | 17   | 17   | 51   | 48    | 25    | 27   | 44   |
| 7           | 19    | 18    | 17   | 17   | 17   | 17   | 18   | 50   | 50    | 24    | 26   | 47   |
| 8           | 19    | 18    | 17   | 15   | 17   | 17   | 20   | 47   | 110   | 23    | 34   | 47   |
| 9           | 19    | 17    | 15   | 15   | 17   | 17   | 20   | 45   | 93    | 22    | 36   | 47   |
| 10          | 19    | 14    | 14   | 16   | 17   | 17   | 18   | 44   | 97    | 26    | 36   | 47   |
| 11          | 19    | 16    | 17   | 18   | 17   | 17   | 19   | 45   | 74    | 59    | 37   | 47   |
| 12          | 19    | 15    | 18   | 17   | 17   | 17   | 19   | 43   | 63    | 53    | 37   | 46   |
| 13          | 19    | 17    | 20   | 17   | 17   | 17   | 18   | 41   | 57    | 42    | 37   | 38   |
| 14          | 19    | 20    | 19   | 17   | 17   | 17   | 18   | 39   | 57    | 40    | 37   | 35   |
| 15          | 18    | 19    | 18   | 16   | 17   | 17   | 22   | 38   | 57    | 39    | 33   | 35   |
| 16          | 19    | 18    | 18   | 15   | 17   | 17   | 63   | 38   | 53    | 38    | 32   | 36   |
| 17          | 19    | 18    | 17   | 17   | 17   | 17   | 145  | 44   | 48    | 39    | 31   | 36   |
| 18          | 19    | 18    | 17   | 18   | 17   | 17   | 126  | 45   | 46    | 41    | 31   | 34   |
| 19          | 19    | 18    | 17   | 17   | 17   | 17   | 77   | 41   | 52    | 37    | 30   | 28   |
| 20          | 21    | 17    | 17   | 16   | 17   | 17   | 37   | 40   | 56    | 36    | 30   | 25   |
| 21          | 20    | 17    | 17   | 17   | 17   | 17   | 28   | 45   | 45    | 44    | 30   | 23   |
| 22          | 22    | 17    | 17   | 17   | 17   | 17   | 52   | 42   | 41    | 44    | 31   | 22   |
| 23          | 21    | 17    | 17   | 17   | 17   | 17   | 70   | 38   | 40    | 43    | 42   | 22   |
| 24          | 20    | 17    | 17   | 18   | 17   | 17   | 60   | 38   | 38    | 43    | 45   | 22   |
| 25          | 19    | 17    | 17   | 17   | 17   | 17   | 51   | 43   | 36    | 36    | 46   | 22   |
| 26          | 19    | 17    | 17   | 17   | 16   | 17   | 43   | 45   | 34    | 35    | 46   | 21   |
| 27          | 19    | 17    | 17   | 17   | 16   | 17   | 38   | 45   | 31    | 37    | 46   | 21   |
| 28          | 18    | 17    | 17   | 17   | 16   | 16   | 34   | 63   | 30    | 51    | 46   | 21   |
| 29          | 18    | 17    | 17   | 17   | ---  | 15   | 83   | 106  | 30    | 39    | 39   | 21   |
| 30          | 18    | 17    | 17   | 16   | ---  | 17   | 77   | 85   | 30    | 38    | 37   | 20   |
| 31          | 18    | ---   | 17   | 16   | ---  | 17   | ---  | 73   | ---   | 34    | 36   | ---  |
| TOTAL       | 593   | 522   | 529  | 519  | 473  | 527  | 1258 | 1617 | 1612  | 1118  | 1079 | 987  |
| MEAN        | 19.1  | 17.4  | 17.1 | 16.7 | 16.9 | 17.0 | 41.9 | 52.2 | 53.7  | 36.1  | 34.8 | 32.9 |
| MAX         | 22    | 20    | 20   | 18   | 17   | 20   | 145  | 106  | 110   | 59    | 46   | 47   |
| MIN         | 18    | 14    | 14   | 15   | 16   | 15   | 17   | 38   | 30    | 22    | 26   | 20   |
| AC-FT       | 1180  | 1040  | 1050 | 1030 | 938  | 1050 | 2500 | 3210 | 3200  | 2220  | 2140 | 1960 |
| CAL YR 1986 | TOTAL | 11669 | MEAN | 32.0 | MAX  | 156  | MIN  | 14   | AC-FT | 23150 |      |      |
| WTR YR 1987 | TOTAL | 10834 | MEAN | 29.7 | MAX  | 145  | MIN  | 14   | AC-FT | 21490 |      |      |



## YELLOWSTONE RIVER BASIN

06312500 POWDER RIVER NEAR KAYCEE, WY

LOCATION.--Lat 43°41'35", long 106°31'48", in NE1/4 NW1/4 SW1/4 sec.13, T.43 N., R.81 W., Johnson County, Hydrologic Unit 10090202, at former gaging station at D Ranch, 600 ft downstream from headgate of Sussex Irrigation Canal, 2.0 mi downstream from confluence of North and Middle Forks, and 6.0 mi east of Kaycee.

DRAINAGE AREA.--980 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--Water years 1946-47, 1949-54, 1968 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) |
|-----------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------|
| OCT 08... | 1440 | 82                                              | 1140                                              | 8.4                            | 13.0                                 | 650                                            | 8.8                                 | 98                                                             | K12                                                            | 460                                    |
| NOV 20... | 0915 | 148                                             | --                                                | --                             | 0.5                                  | --                                             | --                                  | --                                                             | --                                                             | 470                                    |
| JAN 13... | 0915 | 102                                             | 1020                                              | 8.4                            | 0.0                                  | 640                                            | 11.6                                | 95                                                             | K10                                                            | 450                                    |
| FEB 19... | 1300 | 96                                              | --                                                | --                             | 1.0                                  | --                                             | --                                  | --                                                             | --                                                             | 460                                    |
| APR 02... | 1540 | 127                                             | 1390                                              | 8.6                            | 8.0                                  | 650                                            | 11.6                                | 116                                                            | 46                                                             | 500                                    |
| 27...     | 1445 | 907                                             | --                                                | --                             | 14.0                                 | --                                             | --                                  | --                                                             | --                                                             | 160                                    |
| MAY 19... | 1345 | 152                                             | --                                                | --                             | 18.5                                 | --                                             | --                                  | --                                                             | --                                                             | 290                                    |
| JUN 22... | 1120 | 73                                              | 970                                               | 8.5                            | 20.0                                 | 630                                            | 7.6                                 | 102                                                            | 350                                                            | 370                                    |
| AUG 06... | 0900 | 0.53                                            | 1520                                              | 7.8                            | 17.0                                 | 640                                            | 7.0                                 | 87                                                             | --                                                             | 550                                    |
| SEP 22... | 1240 | 49                                              | --                                                | --                             | 14.5                                 | --                                             | --                                  | --                                                             | --                                                             | 500                                    |

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

| DATE      | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SI02) |
|-----------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|
| OCT 08... | 110                                          | 44                                                   | 93                                           | 2                                       | 2.4                                                 | 190                                             | 380                                           | 51                                                  | 0.3                                                | 5.0                                               |
| NOV 20... | 110                                          | 47                                                   | 97                                           | 2                                       | 2.2                                                 | 200                                             | 380                                           | 44                                                  | 0.3                                                | 8.8                                               |
| JAN 13... | 110                                          | 42                                                   | 76                                           | 2                                       | 2.7                                                 | 190                                             | 340                                           | 51                                                  | 0.4                                                | 9.2                                               |
| FEB 19... | 110                                          | 45                                                   | 95                                           | 2                                       | 2.4                                                 | 200                                             | 370                                           | 55                                                  | 0.3                                                | 9.9                                               |
| APR 02... | 120                                          | 48                                                   | 130                                          | 3                                       | 3.1                                                 | 190                                             | 470                                           | 43                                                  | 0.4                                                | 11                                                |
| 27...     | 41                                           | 15                                                   | 20                                           | 0.7                                     | 1.7                                                 | 94                                              | 97                                            | 7.2                                                 | 0.2                                                | 7.3                                               |
| MAY 19... | 71                                           | 28                                                   | 64                                           | 2                                       | 2.8                                                 | 130                                             | 250                                           | 24                                                  | 0.3                                                | 9.1                                               |
| JUN 22... | 89                                           | 36                                                   | 71                                           | 2                                       | 2.4                                                 | 170                                             | 270                                           | 43                                                  | 0.3                                                | 7.9                                               |
| AUG 06... | 140                                          | 49                                                   | 130                                          | 2                                       | 3.9                                                 | 210                                             | 500                                           | 76                                                  | 0.3                                                | 8.1                                               |
| SEP 22... | 120                                          | 48                                                   | 110                                          | 2                                       | 3.3                                                 | 180                                             | 440                                           | 61                                                  | 0.3                                                | 5.3                                               |

06312500 POWDER RIVER NEAR KAYCEE, WY--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|--------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------|
| OCT<br>08... | 844                                                                | 800                                                            | 1.1                                                 | 187                                               | <0.1                                                 | <0.1                                                          | 0.02                                                 | 0.48                                                 | 0.5                                                                 | 0.19                                        |
| NOV<br>20... | 860                                                                | 810                                                            | 1.2                                                 | 344                                               | --                                                   | 0.7                                                           | --                                                   | --                                                   | --                                                                  | 0.15                                        |
| JAN<br>13... | 800                                                                | 750                                                            | 1.1                                                 | 220                                               | 0.6                                                  | 0.6                                                           | 0.05                                                 | --                                                   | <0.2                                                                | 0.08                                        |
| FEB<br>19... | 884                                                                | 810                                                            | 1.2                                                 | 229                                               | --                                                   | 0.5                                                           | --                                                   | --                                                   | --                                                                  | --                                          |
| APR<br>02... | 972                                                                | 940                                                            | 1.3                                                 | 333                                               | 0.6                                                  | 0.6                                                           | 0.06                                                 | 1.0                                                  | 1.1                                                                 | 0.24                                        |
| 27...        | 244                                                                | 250                                                            | 0.33                                                | 598                                               | --                                                   | 0.3                                                           | --                                                   | --                                                   | --                                                                  | --                                          |
| MAY<br>19... | 564                                                                | 530                                                            | 0.77                                                | 231                                               | --                                                   | 0.3                                                           | --                                                   | --                                                   | --                                                                  | --                                          |
| JUN<br>22... | 692                                                                | 620                                                            | 0.94                                                | 136                                               | <0.1                                                 | <0.1                                                          | 0.04                                                 | 0.66                                                 | 0.7                                                                 | 0.08                                        |
| AUG<br>06... | 1070                                                               | 1000                                                           | 1.5                                                 | 1.5                                               | --                                                   | <0.1                                                          | --                                                   | --                                                   | --                                                                  | --                                          |
| SEP<br>22... | 940                                                                | 900                                                            | 1.3                                                 | 124                                               | --                                                   | <0.1                                                          | --                                                   | --                                                   | --                                                                  | --                                          |

## 06313000 SOUTH FORK POWDER RIVER NEAR KAYCEE, WY

LOCATION.--Lat 43°37'03", long 106°34'39", in NW1/4 SE1/4 SE1/4 sec.9, T.42 N., R.81 W., Johnson County, Hydrologic Unit 10090203, 1,000 ft upstream from bridge on old U.S. Highway 87, 0.8 mi upstream from bridge on Interstate 25, 1.7 mi upstream from Murphy Creek, 6.6 mi southeast of Kaycee, and 7 mi upstream from mouth.

DRAINAGE AREA.--1,150 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--Water years 1949-53, 1968 to December 1981, April 1983 to September 1985, October 1986 to September 1987.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE.--April 1983 to September 1984.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | PH<br>(STAND-<br>ARD<br>UNITS) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------------|--------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|
| NOV<br>20... | 1300 | 90                                              | 2700                                              | 0.5                                  | 8.4                            | 690                                    | 190                                          | 52                                                   | 380                                          | 7                                       | 5.0                                                 | 130                                             |
| JAN<br>14... | 1330 | 1.8                                             | 4200                                              | 0.0                                  | 8.4                            | 1200                                   | 320                                          | 95                                                   | 550                                          | 7                                       | 7.9                                                 | 170                                             |
| FEB<br>19... | 1500 | 41                                              | 3500                                              | 3.0                                  | 8.2                            | 990                                    | 260                                          | 82                                                   | 470                                          | 7                                       | 7.2                                                 | 160                                             |
| APR<br>02... | 0930 | 230                                             | 2800                                              | 0.5                                  | 8.4                            | 630                                    | 160                                          | 57                                                   | 380                                          | 7                                       | 6.2                                                 | 120                                             |
| MAY<br>14... | 1530 | 12                                              | 4000                                              | 31.0                                 | 8.5                            | 1000                                   | 260                                          | 89                                                   | 610                                          | 9                                       | 12                                                  | 140                                             |
| JUN<br>08... | 1040 | 1340                                            | 2450                                              | 12.0                                 | 8.1                            | 810                                    | 220                                          | 64                                                   | 330                                          | 5                                       | 8.7                                                 | 210                                             |
| JUL<br>01... | 1440 | 290                                             | 3600                                              | 23.0                                 | 7.9                            | 1200                                   | 310                                          | 94                                                   | 500                                          | 7                                       | 12                                                  | 200                                             |
| 22...        | 0900 | 6.6                                             | 3600                                              | 18.5                                 | 8.3                            | 1100                                   | 300                                          | 80                                                   | 570                                          | 8                                       | 12                                                  | 140                                             |
| AUG<br>31... | 0950 | 3.6                                             | 4100                                              | 16.0                                 | 8.4                            | 1400                                   | 410                                          | 93                                                   | 540                                          | 7                                       | 12                                                  | 140                                             |
| SEP<br>22... | 0830 | 3.7                                             | 4050                                              | 8.5                                  | 8.3                            | 1300                                   | 350                                          | 100                                                  | 560                                          | 7                                       | 11                                                  | 130                                             |

| DATE         | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDED<br>(T/DAY) |
|--------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|--------------------------------------------|----------------------------------------------------------------|
| NOV<br>20... | 1200                                          | 40                                                  | 0.6                                                | 6.8                                               | 2000                                                                | 2.8                                                 | 498                                               | 4.0                                                           | 1.1                                         | 2460                                       | 598                                                            |
| JAN<br>14... | 2100                                          | 120                                                 | 0.8                                                | 6.9                                               | 3300                                                                | 4.5                                                 | 16                                                | 3.3                                                           | 0.12                                        | 400                                        | 1.9                                                            |
| FEB<br>19... | 1700                                          | 79                                                  | 0.6                                                | 8.1                                               | 2700                                                                | 3.7                                                 | 299                                               | 2.7                                                           | 0.28                                        | 487                                        | 54                                                             |
| APR<br>02... | 1300                                          | 18                                                  | 0.5                                                | 8.4                                               | 2000                                                                | 2.7                                                 | 1240                                              | 0.8                                                           | 6.1                                         | 12100                                      | 7510                                                           |
| MAY<br>14... | 2000                                          | 96                                                  | 0.8                                                | 7.8                                               | 3200                                                                | 4.3                                                 | 102                                               | 0.9                                                           | 0.07                                        | 30                                         | 0.97                                                           |
| JUN<br>08... | 1200                                          | 18                                                  | 0.6                                                | 5.2                                               | 2000                                                                | 2.7                                                 | 7140                                              | 2.3                                                           | 11                                          | 71300                                      | 258000                                                         |
| JUL<br>01... | 2000                                          | 43                                                  | 0.7                                                | 6.3                                               | 3100                                                                | 4.2                                                 | 2420                                              | 1.0                                                           | 11                                          | 67800                                      | 53100                                                          |
| 22...        | 2000                                          | 54                                                  | 0.7                                                | 6.5                                               | 3100                                                                | 4.2                                                 | 55                                                | 1.1                                                           | 1.1                                         | 2100                                       | 37                                                             |
| AUG<br>31... | 2300                                          | 65                                                  | 0.6                                                | 6.1                                               | 3500                                                                | 4.8                                                 | 34                                                | 1.0                                                           | 0.41                                        | 102                                        | 0.99                                                           |
| SEP<br>22... | 2200                                          | 71                                                  | 0.6                                                | 2.7                                               | 3400                                                                | 4.6                                                 | 34                                                | 0.6                                                           | 0.03                                        | 75                                         | 0.75                                                           |

06313000 SOUTH FORK POWDER RIVER NEAR KAYCEE, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | SED. SUSP. FALL DIAM. |                      |                      | SED. SUSP. FALL DIAM. |                      |                      | SED. SUSP. FALL DIAM. |                      |                      |
|-----------|------|-----------------------|----------------------|----------------------|-----------------------|----------------------|----------------------|-----------------------|----------------------|----------------------|
|           |      | % FINER THAN .004 MM  | % FINER THAN .008 MM | % FINER THAN .016 MM | % FINER THAN .004 MM  | % FINER THAN .008 MM | % FINER THAN .016 MM | % FINER THAN .004 MM  | % FINER THAN .008 MM | % FINER THAN .016 MM |
| APR 02... | 0930 | 49                    | 66                   | 78                   |                       |                      |                      |                       |                      |                      |
| JUN 08... | 1040 | 48                    | 57                   | 67                   |                       |                      |                      |                       |                      |                      |
| DATE      | TIME | BED MAT. SIEVE DIAM.  | BED MAT. SIEVE DIAM. | BED MAT. SIEVE DIAM. | BED MAT. SIEVE DIAM.  | BED MAT. SIEVE DIAM. | BED MAT. SIEVE DIAM. | BED MAT. SIEVE DIAM.  | BED MAT. SIEVE DIAM. | BED MAT. SIEVE DIAM. |
|           |      | % FINER THAN .062 MM  | % FINER THAN .125 MM | % FINER THAN .250 MM | % FINER THAN .500 MM  | % FINER THAN 1.00 MM | % FINER THAN 2.00 MM | % FINER THAN 4.00 MM  | % FINER THAN 8.00 MM | % FINER THAN 16.0 MM |
| MAY 14... | 1530 | 0                     | 0                    | 2                    | 24                    | 58                   | 78                   | 89                    | 95                   | 100                  |
| JUL 01... | 1440 | 1                     | 3                    | 8                    | 25                    | 42                   | 53                   | 66                    | 81                   | 93                   |

## YELLOWSTONE RIVER BASIN

06313400 SALT CREEK NEAR SUSSEX, WY

LOCATION.--Lat 43°37'19", long 106°22'04", in NE1/4 NE1/4 SE1/4 sec.8, T.42 N., R.79 W., Johnson County, Hydrologic Unit 10090204, on left bank 200 ft upstream from bridge on West Sussex Dugout oil field road, 6.3 mi southwest of Sussex, and 12.6 mi upstream from mouth.

DRAINAGE AREA.--769 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1976 to September 1981, October 1982 to current year.

REVISED RECORDS.--WDR WY-85-1: 1981.

GAGE.--Water-stage recorder. Elevation of gage is 4,480 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 9-19, Dec. 2-4, and Dec. 9 to Feb. 6. Records fair except those for estimated daily discharges, which are poor. Some regulation by Lower Salt Creek Reservoir, capacity, 2,710 acre-ft.

AVERAGE DISCHARGE.--10 years (water years 1977-81, 1983-87), 51.5 ft<sup>3</sup>/s, 37,330 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft<sup>3</sup>/s, May 18, 1978, gage height, 9.88 ft, from floodmark, from rating curve extended above 2,300 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily discharge, 12 ft<sup>3</sup>/s, Aug. 21-25, Sept. 5, 6, 17, 18, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Oct. 22 | 2130 | 868                            | 4.01             | June 8  | 0515 | *3,910                         | *6.96            |
| Mar. 6  | 0530 | 1,160                          | 4.45             | June 10 | 0600 | 993                            | 4.20             |
| May 25  | 0800 | 862                            | 3.99             | June 15 | 0430 | 1,800                          | 5.23             |

Minimum daily discharge, 19 ft<sup>3</sup>/s, Nov. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN   | JUL   | AUG  | SEP  |
|-------------|-------|-------|------|------|------|------|------|------|-------|-------|------|------|
| 1           | 34    | 37    | 43   | 36   | 52   | 47   | 274  | 40   | 48    | 88    | 40   | 34   |
| 2           | 79    | 37    | 40   | 38   | 56   | 48   | 120  | 40   | 47    | 48    | 37   | 35   |
| 3           | 238   | 38    | 38   | 39   | 64   | 56   | 185  | 61   | 46    | 207   | 37   | 35   |
| 4           | 92    | 40    | 39   | 38   | 56   | 158  | 323  | 62   | 46    | 105   | 36   | 55   |
| 5           | 64    | 40    | 46   | 39   | 52   | 452  | 294  | 46   | 45    | 55    | 36   | 106  |
| 6           | 55    | 42    | 43   | 38   | 50   | 887  | 202  | 47   | 45    | 48    | 37   | 41   |
| 7           | 44    | 46    | 42   | 36   | 59   | 837  | 118  | 46   | 57    | 45    | 35   | 40   |
| 8           | 39    | 45    | 40   | 36   | 115  | 486  | 84   | 49   | 1490  | 44    | 37   | 41   |
| 9           | 37    | 34    | 36   | 37   | 149  | 164  | 74   | 48   | 168   | 44    | 35   | 41   |
| 10          | 37    | 19    | 25   | 38   | 145  | 76   | 64   | 46   | 488   | 45    | 34   | 40   |
| 11          | 38    | 21    | 28   | 44   | 149  | 66   | 68   | 45   | 134   | 47    | 32   | 40   |
| 12          | 36    | 25    | 32   | 52   | 140  | 62   | 71   | 112  | 81    | 48    | 32   | 39   |
| 13          | 36    | 29    | 36   | 56   | 132  | 67   | 57   | 54   | 65    | 43    | 34   | 40   |
| 14          | 35    | 34    | 39   | 54   | 153  | 85   | 51   | 45   | 71    | 41    | 33   | 40   |
| 15          | 36    | 39    | 40   | 45   | 89   | 79   | 46   | 40   | 598   | 39    | 33   | 39   |
| 16          | 37    | 44    | 41   | 36   | 70   | 69   | 45   | 39   | 82    | 39    | 32   | 40   |
| 17          | 36    | 49    | 40   | 38   | 63   | 72   | 44   | 166  | 56    | 40    | 31   | 60   |
| 18          | 37    | 53    | 39   | 40   | 58   | 64   | 42   | 119  | 49    | 94    | 31   | 44   |
| 19          | 38    | 58    | 40   | 39   | 57   | 64   | 40   | 66   | 49    | 99    | 31   | 42   |
| 20          | 40    | 62    | 40   | 38   | 54   | 58   | 47   | 52   | 48    | 47    | 30   | 39   |
| 21          | 40    | 69    | 39   | 37   | 50   | 44   | 49   | 51   | 47    | 41    | 30   | 39   |
| 22          | 345   | 77    | 42   | 39   | 48   | 43   | 45   | 49   | 45    | 77    | 30   | 38   |
| 23          | 237   | 58    | 41   | 41   | 48   | 56   | 41   | 44   | 45    | 66    | 30   | 40   |
| 24          | 67    | 55    | 40   | 42   | 49   | 58   | 41   | 156  | 44    | 44    | 167  | 38   |
| 25          | 48    | 55    | 38   | 43   | 49   | 54   | 39   | 380  | 44    | 37    | 76   | 38   |
| 26          | 41    | 50    | 39   | 45   | 44   | 58   | 37   | 89   | 43    | 36    | 74   | 38   |
| 27          | 38    | 47    | 40   | 50   | 47   | 81   | 36   | 56   | 43    | 35    | 42   | 38   |
| 28          | 37    | 45    | 39   | 60   | 45   | 58   | 38   | 59   | 48    | 197   | 35   | 38   |
| 29          | 36    | 45    | 42   | 74   | ---  | 58   | 38   | 74   | 45    | 152   | 33   | 38   |
| 30          | 38    | 48    | 40   | 60   | ---  | 56   | 40   | 56   | 42    | 53    | 34   | 35   |
| 31          | 36    | ---   | 38   | 52   | ---  | 85   | ---  | 50   | ---   | 42    | 34   | ---  |
| TOTAL       | 2051  | 1341  | 1205 | 1360 | 2143 | 4548 | 2653 | 2287 | 4159  | 2046  | 1268 | 1271 |
| MEAN        | 66.2  | 44.7  | 38.9 | 43.9 | 76.5 | 147  | 88.4 | 73.8 | 139   | 66.0  | 40.9 | 42.4 |
| MAX         | 345   | 77    | 46   | 74   | 153  | 887  | 323  | 380  | 1490  | 207   | 167  | 106  |
| MIN         | 34    | 19    | 25   | 36   | 44   | 43   | 36   | 39   | 42    | 35    | 30   | 34   |
| AC-FT       | 4070  | 2660  | 2390 | 2700 | 4250 | 9020 | 5260 | 4540 | 8250  | 4060  | 2520 | 2520 |
| CAL YR 1986 | TOTAL | 18979 | MEAN | 52.0 | MAX  | 502  | MIN  | 19   | AC-FT | 37640 |      |      |
| WTR YR 1987 | TOTAL | 26332 | MEAN | 72.1 | MAX  | 1490 | MIN  | 19   | AC-FT | 52230 |      |      |

06313400 SALT CREEK NEAR SUSSEX, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949, 1952, 1968 to 1981, October 1982 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>LAB<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LITY<br>LAB<br>(MG/L<br>AS<br>CACO3) |
|-----------|------|-------------------------------------------------|----------------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-----------------------------------------------|
| OCT 07... | 0920 | 44                                              | 4770                                                     | 10.5                                 | 300                                    | 56                                           | 38                                                   | 1000                                         | 26                                      | 11                                                  | 570                                           |
| 28...     | 1130 | 38                                              | 6250                                                     | 11.0                                 | 270                                    | 44                                           | 39                                                   | 1400                                         | 38                                      | 14                                                  | 830                                           |
| DEC 08... | 1015 | 38                                              | 6470                                                     | 0.0                                  | 320                                    | 52                                           | 45                                                   | 1400                                         | 35                                      | 15                                                  | 770                                           |
| JAN 12... | 1100 | 48                                              | 5490                                                     | 0.0                                  | 310                                    | 62                                           | 38                                                   | 1200                                         | 30                                      | 17                                                  | 570                                           |
| FEB 11... | 1430 | 130                                             | 3520                                                     | 7.5                                  | 440                                    | 81                                           | 57                                                   | 640                                          | 14                                      | 9.8                                                 | 310                                           |
| MAR 06... | 0920 | 990                                             | 1770                                                     | 4.0                                  | 270                                    | 49                                           | 36                                                   | 290                                          | 8                                       | 6.0                                                 | 210                                           |
| APR 14... | 1230 | 61                                              | 6840                                                     | 12.0                                 | 810                                    | 110                                          | 130                                                  | 1400                                         | 22                                      | 14                                                  | 620                                           |
| MAY 14... | 1245 | 45                                              | 6440                                                     | 25.0                                 | 430                                    | 66                                           | 65                                                   | 1300                                         | 28                                      | 13                                                  | 680                                           |
| JUN 08... | 1030 | 1960                                            | 2760                                                     | 16.0                                 | 660                                    | 120                                          | 87                                                   | 390                                          | 7                                       | 9.1                                                 | 160                                           |
| AUG 31... | 0915 | 34                                              | 6110                                                     | 16.5                                 | 230                                    | 37                                           | 33                                                   | 1400                                         | 41                                      | 15                                                  | 790                                           |

| DATE      | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY) |
|-----------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------|
| OCT 07... | 800                                           | 770                                                 | 1.3                                                | 17                                                | 3160                                                               | 3000                                                                | 4.3                                                 | 375                                               | <0.1                                                          | 1110                                      | 132                                                           |
| 28...     | 740                                           | 1100                                                | 2.1                                                | 25                                                | 4000                                                               | 3900                                                                | 5.4                                                 | 410                                               | <0.1                                                          | --                                        | --                                                            |
| DEC 08... | 850                                           | 1200                                                | 2.1                                                | 22                                                | 4190                                                               | 4000                                                                | 5.7                                                 | 430                                               | <0.1                                                          | 234                                       | 24                                                            |
| JAN 12... | 760                                           | 1000                                                | 2.3                                                | 21                                                | 3580                                                               | 3400                                                                | 4.9                                                 | 464                                               | <0.1                                                          | 804                                       | 104                                                           |
| FEB 11... | 1000                                          | 360                                                 | 0.8                                                | 9.4                                               | 2410                                                               | 2300                                                                | 3.3                                                 | 846                                               | 0.2                                                           | 3710                                      | 1300                                                          |
| MAR 06... | 600                                           | 75                                                  | 0.4                                                | 4.2                                               | 1170                                                               | 1200                                                                | 1.6                                                 | 3130                                              | 0.4                                                           | 21200                                     | 56700                                                         |
| APR 14... | 2100                                          | 800                                                 | 1.4                                                | 22                                                | 4930                                                               | 4900                                                                | 6.7                                                 | 812                                               | 0.1                                                           | 498                                       | 82                                                            |
| MAY 14... | 1300                                          | 910                                                 | 1.8                                                | 18                                                | 4280                                                               | 4100                                                                | 5.8                                                 | 520                                               | <0.1                                                          | 619                                       | 75                                                            |
| JUN 08... | 1200                                          | 63                                                  | 0.5                                                | 3.8                                               | 1970                                                               | 2000                                                                | 2.7                                                 | 10400                                             | 0.9                                                           | 37500                                     | 198000                                                        |
| AUG 31... | 760                                           | 1200                                                | 2.4                                                | 22                                                | 3840                                                               | 3900                                                                | 5.2                                                 | 353                                               | <0.1                                                          | 148                                       | 14                                                            |

| DATE      | TIME | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.004 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.008 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.016 MM |
|-----------|------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| FEB 11... | 1430 | 54                                                           | 67                                                           | 81                                                           |
| MAR 06... | 0920 | 53                                                           | 62                                                           | 76                                                           |
| JUN 08... | 1030 | 57                                                           | 68                                                           | 77                                                           |

| DATE      | TIME | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.125 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.250 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.500 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>1.00 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>2.00 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>4.00 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>8.00 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>16.0 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>32.0 MM |
|-----------|------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
| MAR 06... | 0920 | 5                                                           | 14                                                          | 48                                                          | 54                                                          | 58                                                          | 63                                                          | 70                                                          | 77                                                          | 86                                                          | 100                                                         |
| MAY 14... | 1245 | 1                                                           | 3                                                           | 33                                                          | 82                                                          | 86                                                          | 88                                                          | 91                                                          | 93                                                          | 95                                                          | 100                                                         |



## YELLOWSTONE RIVER BASIN

06313500 POWDER RIVER AT SUSSEX, WY

LOCATION.--Lat 43°41'44", long 106°18'24", in SW1/4 SW1/4 NW1/4 sec.13, T.43 N., R.79 W., Johnson County, Hydrologic Unit 10090202, on left bank 0.5 mi upstream from bridge on State Highway 192, 0.6 mi west of Sussex, and 2.7 mi downstream from Salt Creek.

DRAINAGE AREA.--3,090 mi<sup>2</sup>, approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1938 to June 1940, February 1950 to September 1957, October 1977 to September 1984, October 1985 to current year.

REVISED RECORDS.--WDR WY-80-1: 1979(M), 1979.

GAGE.--Water-stage recorder. Datum of gage is 4,365.28 ft above National Geodetic Vertical datum of 1929. Prior to June 30, 1940, nonrecording gage about 500 ft downstream from State Highway 192 at datum 4,363.23 ft, National Geodetic Vertical Datum of 1929. Feb. 8, 1950, to Sept. 30, 1957, water-stage recorder about 600 ft downstream from State Highway 192 at datum 4,362.16 ft. October 1977, to Apr. 8, 1983, water-stage recorder 10 ft downstream from State Highway 192 at datum 4,362.95 ft.

REMARKS.--Estimated daily discharges: Oct. 1-7, Nov. 9-21, Dec. 9 to Feb. 9, Feb. 24 to Mar. 2, June 26-30, July 1, 6-18, and Aug. 27, 28. Records poor. Numerous small reservoirs and diversions for irrigation of about 17,000 acres upstream from station.

AVERAGE DISCHARGE.--17 years (water years 1939, 1951-57, 1978-84, 1986-87), 204 ft<sup>3</sup>/s, 147,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,500 ft<sup>3</sup>/s, May 23, 1952, elevation, 4,374.76 ft, from floodmarks, site then in use, from rating curve extended above 1,500 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow; minimum daily discharge, 1.5 ft<sup>3</sup>/s, Aug. 25, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 30, 1923, reached an elevation of 4,375.75 ft at site about 600 ft downstream from State Highway 192, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|--------|------|--------------------------------|------------------|
| Oct. 23 | 0230 | *7,480                         | a*9.93           | June 8 | 1200 | 6,040                          | 9.02             |
| Mar. 6  | 0800 | 3,500                          | a7.11            |        |      |                                |                  |

a-From floodmarks.

Minimum daily discharge, 34 ft<sup>3</sup>/s, Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|--------|------|------|-------|-------|-------|-------|-------|-------|--------|------|
| 1           | 160   | 168    | 150  | 134  | 162   | 140   | 877   | 691   | 230   | 131   | 111    | 50   |
| 2           | 325   | 183    | 152  | 131  | 196   | 220   | 643   | 631   | 194   | 213   | 73     | 44   |
| 3           | 700   | 176    | 187  | 137  | 238   | 334   | 563   | 687   | 177   | 276   | 73     | 42   |
| 4           | 395   | 179    | 134  | 142  | 252   | 474   | 847   | 630   | 157   | 285   | 59     | 96   |
| 5           | 277   | 174    | 156  | 152  | 243   | 923   | 903   | 487   | 129   | 142   | 42     | 178  |
| 6           | 218   | 178    | 174  | 167  | 258   | 2530  | 818   | 425   | 119   | 116   | 37     | 184  |
| 7           | 186   | 192    | 160  | 158  | 277   | 2470  | 612   | 352   | 112   | 102   | 37     | 151  |
| 8           | 157   | 163    | 123  | 147  | 460   | 2070  | 523   | 364   | 3430  | 90    | 50     | 170  |
| 9           | 147   | 120    | 75   | 136  | 600   | 1300  | 419   | 333   | 1100  | 84    | 115    | 134  |
| 10          | 136   | 58     | 53   | 142  | 549   | 785   | 390   | 303   | 919   | 77    | 73     | 150  |
| 11          | 134   | 80     | 69   | 150  | 490   | 650   | 357   | 299   | 643   | 71    | 66     | 108  |
| 12          | 136   | 90     | 85   | 155  | 434   | 557   | 334   | 334   | 389   | 81    | 59     | 118  |
| 13          | 130   | 102    | 100  | 166  | 421   | 547   | 355   | 251   | 296   | 111   | 54     | 101  |
| 14          | 131   | 120    | 114  | 159  | 458   | 730   | 320   | 206   | 283   | 85    | 49     | 91   |
| 15          | 133   | 157    | 127  | 149  | 387   | 974   | 315   | 185   | 737   | 70    | 47     | 81   |
| 16          | 122   | 188    | 130  | 136  | 288   | 684   | 312   | 153   | 342   | 58    | 47     | 76   |
| 17          | 157   | 223    | 125  | 121  | 258   | 657   | 349   | 323   | 225   | 70    | 47     | 116  |
| 18          | 148   | 260    | 120  | 119  | 247   | 525   | 447   | 534   | 185   | 181   | 44     | 193  |
| 19          | 133   | 293    | 121  | 114  | 242   | 442   | 553   | 333   | 172   | 317   | 38     | 168  |
| 20          | 125   | 337    | 121  | 108  | 234   | 472   | 555   | 209   | 165   | 132   | 40     | 134  |
| 21          | 132   | 397    | 121  | 106  | 210   | 421   | 454   | 185   | 164   | 79    | 40     | 129  |
| 22          | 1280  | 440    | 123  | 112  | 211   | 378   | 427   | 187   | 152   | 153   | 34     | 122  |
| 23          | 3900  | 328    | 120  | 117  | 190   | 388   | 431   | 193   | 143   | 139   | 37     | 110  |
| 24          | 874   | 251    | 125  | 120  | 170   | 414   | 534   | 405   | 143   | 91    | 177    | 112  |
| 25          | 480   | 242    | 127  | 126  | 155   | 379   | 614   | 582   | 130   | 65    | 184    | 112  |
| 26          | 324   | 213    | 130  | 136  | 147   | 378   | 688   | 324   | 120   | 56    | 132    | 103  |
| 27          | 271   | 179    | 132  | 144  | 127   | 460   | 761   | 192   | 112   | 53    | 87     | 101  |
| 28          | 214   | 188    | 133  | 157  | 110   | 414   | 793   | 217   | 101   | 198   | 68     | 108  |
| 29          | 197   | 187    | 134  | 175  | ---   | 321   | 711   | 395   | 93    | 270   | 58     | 111  |
| 30          | 186   | 194    | 138  | 192  | ---   | 298   | 673   | 339   | 100   | 99    | 60     | 104  |
| 31          | 175   | ---    | 135  | 178  | ---   | 391   | ---   | 299   | ---   | 260   | 56     | ---  |
| TOTAL       | 12083 | 6060   | 3894 | 4386 | 8014  | 21726 | 16578 | 11048 | 11262 | 4155  | 2094   | 3497 |
| MEAN        | 390   | 202    | 126  | 141  | 286   | 701   | 553   | 356   | 375   | 134   | 67.5   | 117  |
| MAX         | 3900  | 440    | 187  | 192  | 600   | 2530  | 903   | 691   | 3430  | 317   | 184    | 193  |
| MIN         | 122   | 58     | 53   | 106  | 110   | 140   | 312   | 153   | 93    | 53    | 34     | 42   |
| AC-FT       | 23970 | 12020  | 7720 | 8700 | 15900 | 43090 | 32880 | 21910 | 22340 | 8240  | 4150   | 6940 |
| CAL YR 1986 | TOTAL | 75569  |      | MEAN | 207   | MAX   | 3900  | MIN   | 33    | AC-FT | 149900 |      |
| WTR YR 1987 | TOTAL | 104797 |      | MEAN | 287   | MAX   | 3900  | MIN   | 34    | AC-FT | 207900 |      |

06313500 POWDER RIVER AT SUSSEX, WY--Continued

PERIOD OF RECORD.--Water years 1949-53, 1967-68, 1976 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1983 to September 1984.

WATER TEMPERATURE: October 1982 to September 1984.

SUSPENDED-SEDIMENT DISCHARGE: May 1983 to September 1984.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>LAB<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) |
|-------|------|-------------------------------------------------|----------------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|
| OCT   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 07... | 1215 | 186                                             | 2640                                                     | 12.5                                 | 520                                    | 130                                          | 48                                                   | 420                                          | 8                                       | 6.8                                                 | 300                                             |
| 23... | 1410 | 2600                                            | --                                                       | 10.0                                 | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                              |
| 28... | 1330 | 208                                             | 2730                                                     | 12.0                                 | 530                                    | 130                                          | 49                                                   | 440                                          | 9                                       | 6.7                                                 | 320                                             |
| DEC   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 08... | 1330 | 106                                             | 2190                                                     | 0.0                                  | 540                                    | 130                                          | 53                                                   | 270                                          | 5                                       | 5.1                                                 | 220                                             |
| JAN   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 12... | 1500 | 155                                             | 2870                                                     | 0.0                                  | 470                                    | 110                                          | 47                                                   | 480                                          | 10                                      | 8.2                                                 | 340                                             |
| FEB   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 11... | 1045 | 460                                             | 2220                                                     | 2.0                                  | 460                                    | 110                                          | 45                                                   | 370                                          | 8                                       | 6.2                                                 | 200                                             |
| MAR   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 06... | 1300 | 2900                                            | 1610                                                     | 7.0                                  | 390                                    | 110                                          | 29                                                   | 220                                          | 5                                       | 5.2                                                 | 170                                             |
| APR   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 14... | 1000 | 324                                             | 3010                                                     | 7.0                                  | 610                                    | 130                                          | 70                                                   | 480                                          | 9                                       | 6.4                                                 | 260                                             |
| MAY   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 14... | 0930 | 217                                             | 2120                                                     | 17.0                                 | 410                                    | 93                                           | 43                                                   | 350                                          | 8                                       | 4.9                                                 | 220                                             |
| JUN   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 08... | 1530 | 5540                                            | 2480                                                     | 16.0                                 | 520                                    | 130                                          | 47                                                   | 360                                          | 7                                       | 8.1                                                 | 150                                             |
| 09... | 1500 | 900                                             | --                                                       | 13.0                                 | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                              |
| AUG   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 31... | 1345 | 56                                              | 4970                                                     | 23.5                                 | 420                                    | 91                                           | 48                                                   | 1000                                         | 22                                      | 12                                                  | 540                                             |

| DATE  | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY) |
|-------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------|
| OCT   |                                               |                                                     |                                                    |                                                   |                                                                    |                                                                |                                                     |                                                   |                                                               |                                           |                                                               |
| 07... | 730                                           | 250                                                 | 0.6                                                | 9.7                                               | 1870                                                               | 1800                                                           | 2.5                                                 | 939                                               | 0.2                                                           | 4150                                      | 2080                                                          |
| 23... | --                                            | --                                                  | --                                                 | --                                                | --                                                                 | --                                                             | --                                                  | --                                                | --                                                            | 37400                                     | 263000                                                        |
| 28... | 710                                           | 270                                                 | 0.9                                                | 12                                                | 1900                                                               | 1800                                                           | 2.6                                                 | 1070                                              | 0.4                                                           | --                                        | --                                                            |
| DEC   |                                               |                                                     |                                                    |                                                   |                                                                    |                                                                |                                                     |                                                   |                                                               |                                           |                                                               |
| 08... | 650                                           | 190                                                 | 0.6                                                | 9.5                                               | 1540                                                               | 1400                                                           | 2.1                                                 | 441                                               | 0.6                                                           | 557                                       | 159                                                           |
| JAN   |                                               |                                                     |                                                    |                                                   |                                                                    |                                                                |                                                     |                                                   |                                                               |                                           |                                                               |
| 12... | 520                                           | 410                                                 | 1.0                                                | 14                                                | 1880                                                               | 1800                                                           | 2.6                                                 | 787                                               | 0.5                                                           | 336                                       | 141                                                           |
| FEB   |                                               |                                                     |                                                    |                                                   |                                                                    |                                                                |                                                     |                                                   |                                                               |                                           |                                                               |
| 11... | 820                                           | 160                                                 | 0.5                                                | 9.0                                               | 1640                                                               | 1600                                                           | 2.2                                                 | 2040                                              | 0.6                                                           | 4920                                      | 6110                                                          |
| MAR   |                                               |                                                     |                                                    |                                                   |                                                                    |                                                                |                                                     |                                                   |                                                               |                                           |                                                               |
| 06... | 620                                           | 43                                                  | 0.5                                                | 5.5                                               | 1100                                                               | 1100                                                           | 1.5                                                 | 8610                                              | 0.6                                                           | 26500                                     | 207000                                                        |
| APR   |                                               |                                                     |                                                    |                                                   |                                                                    |                                                                |                                                     |                                                   |                                                               |                                           |                                                               |
| 14... | 1100                                          | 200                                                 | 0.7                                                | 12                                                | 2200                                                               | 2200                                                           | 3.0                                                 | 1920                                              | 0.5                                                           | 1440                                      | 1260                                                          |
| MAY   |                                               |                                                     |                                                    |                                                   |                                                                    |                                                                |                                                     |                                                   |                                                               |                                           |                                                               |
| 14... | 610                                           | 190                                                 | 0.5                                                | 9.4                                               | 1460                                                               | 1400                                                           | 2.0                                                 | 855                                               | 0.2                                                           | 1380                                      | 809                                                           |
| JUN   |                                               |                                                     |                                                    |                                                   |                                                                    |                                                                |                                                     |                                                   |                                                               |                                           |                                                               |
| 08... | 1100                                          | 44                                                  | 0.6                                                | 4.9                                               | 1780                                                               | 1800                                                           | 2.4                                                 | 26600                                             | 1.0                                                           | 50000                                     | 748000                                                        |
| 09... | --                                            | --                                                  | --                                                 | --                                                | --                                                                 | --                                                             | --                                                  | --                                                | --                                                            | 20400                                     | 49600                                                         |
| AUG   |                                               |                                                     |                                                    |                                                   |                                                                    |                                                                |                                                     |                                                   |                                                               |                                           |                                                               |
| 31... | 940                                           | 770                                                 | 1.5                                                | 16                                                | 3180                                                               | 3200                                                           | 4.3                                                 | 481                                               | 0.1                                                           | 631                                       | 95                                                            |

## CHEYENNE RIVER BASIN

06313500 POWDER RIVER AT SUSSEX, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | SED. SUSP. FALL DIAM. |                      |                      | SED. SUSP. FALL DIAM. |                      |                      | SED. SUSP. FALL DIAM. |                      |                      |
|-----------|------|-----------------------|----------------------|----------------------|-----------------------|----------------------|----------------------|-----------------------|----------------------|----------------------|
|           |      | % FINER THAN .004 MM  | % FINER THAN .008 MM | % FINER THAN .016 MM | % FINER THAN .004 MM  | % FINER THAN .008 MM | % FINER THAN .016 MM | % FINER THAN .004 MM  | % FINER THAN .008 MM | % FINER THAN .016 MM |
| FEB 11... | 1045 | 31                    | 36                   | 42                   |                       |                      |                      |                       |                      |                      |
| MAR 06... | 1300 | 48                    | 59                   | 71                   |                       |                      |                      |                       |                      |                      |
| JUN 08... | 1530 | 49                    | 60                   | 70                   |                       |                      |                      |                       |                      |                      |
| DATE      | TIME | BED MAT. SIEVE DIAM.  |                      |                      | BED MAT. SIEVE DIAM.  |                      |                      | BED MAT. SIEVE DIAM.  |                      |                      |
|           |      | % FINER THAN .062 MM  | % FINER THAN .125 MM | % FINER THAN .250 MM | % FINER THAN .500 MM  | % FINER THAN 1.00 MM | % FINER THAN 2.00 MM | % FINER THAN 4.00 MM  | % FINER THAN 8.00 MM | % FINER THAN 16.0 MM |
| MAR 06... | 1300 | 10                    | 26                   | 77                   | 100                   | --                   | --                   | --                    | --                   | --                   |
| MAY 14... | 0930 | 1                     | 6                    | 45                   | 82                    | 92                   | 96                   | 98                    | 99                   | 100                  |

## 06313700 DEAD HORSE CREEK NEAR BUFFALO, WY

LOCATION.--Lat 44°12'54", long 106°06'41", in NW1/4 SE1/4 SW1/4 sec.15, T.49 N., R.77 W., Johnson County, Hydrologic Unit 10090202, on right bank 250 ft downstream from bridge on dirt road, 0.8 mi upstream from Interstate Highway 90, 5.3 mi upstream from mouth, and 31 mi east of Buffalo.

DRAINAGE AREA.--151 mi<sup>2</sup>.

PERIOD OF RECORD.--Annual maximum, water years 1958-71. October 1971 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,970 ft above National Geodetic Vertical Datum of 1929, from topographic map. Oct. 1, 1958, to Sept. 30, 1971, crest-stage gage at site 250 ft upstream at present datum. Nov. 24, 1971, to July 15, 1976, water-stage recorder at site 0.3 mi upstream at different datum. July 16, 1976, to July 18, 1984, at site 250 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Oct. 1, 3-21, Oct. 23 to May 15, May 18-23, 26-28, June 1-6, 9-18, 24-30, July 1, 2, 6-9, 30, 31, Aug. 1-23, 29-31, and Sept. 1-6, 8-30, while flow was below the orifice or affected by backwater from ice. Records poor.

AVERAGE DISCHARGE.--16 years, 2.37 ft<sup>3</sup>/s, 1,720 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,460 ft<sup>3</sup>/s, Sept. 18, 1986, gage height, 10.95 ft, from floodmarks, from rating curve extended above 640 ft<sup>3</sup>/s on basis of contracted-opening and flow-over-road measurement of peak flow; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and maximum (\*):

| Date                   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                       | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|------------------------|------|-----------------------------------|---------------------|--------------------------------------------|------|-----------------------------------|---------------------|
| July 17                | 2200 | *401                              | *6.64               | No other peak greater than base discharge. |      |                                   |                     |
| No flow for many days. |      |                                   |                     |                                            |      |                                   |                     |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC | JAN  | FEB  | MAR   | APR  | MAY  | JUN   | JUL   | AUG   | SEP |
|-------------|-------|--------|-----|------|------|-------|------|------|-------|-------|-------|-----|
| 1           | .02   | .01    | .02 | .05  | .00  | .07   | .09  | .03  | .05   | .04   | .00   | .00 |
| 2           | .89   | .01    | .02 | .04  | .00  | .30   | .06  | .02  | .03   | .09   | .00   | .00 |
| 3           | .36   | .01    | .01 | .05  | .00  | 2.8   | .09  | .02  | .03   | 7.3   | .00   | .00 |
| 4           | .15   | .01    | .00 | .07  | .00  | 15    | .09  | .02  | .03   | .14   | .00   | .01 |
| 5           | .05   | .01    | .00 | .09  | .00  | 7.4   | .08  | .02  | .04   | .04   | .00   | .02 |
| 6           | .04   | .01    | .00 | .08  | .00  | 3.9   | .07  | .02  | .04   | .03   | .00   | .01 |
| 7           | .03   | .01    | .00 | .07  | .00  | 2.5   | .06  | .02  | .31   | .03   | .00   | .01 |
| 8           | .02   | .00    | .00 | .06  | .00  | .55   | .06  | .02  | .09   | .02   | .00   | .01 |
| 9           | .01   | .00    | .00 | .04  | .00  | .24   | .06  | .02  | .06   | .03   | .00   | .01 |
| 10          | .01   | .00    | .00 | .03  | .00  | .10   | .06  | .02  | .03   | .04   | .00   | .00 |
| 11          | .00   | .00    | .00 | .02  | .00  | .08   | .06  | .02  | .03   | .22   | .00   | .00 |
| 12          | .00   | .00    | .01 | .01  | .00  | .15   | .06  | .02  | .02   | .59   | .00   | .00 |
| 13          | .01   | .00    | .02 | .00  | .00  | .25   | .06  | .03  | .02   | .08   | .00   | .00 |
| 14          | .02   | .00    | .03 | .00  | .00  | .20   | .06  | .03  | .02   | .04   | .00   | .00 |
| 15          | .02   | .00    | .03 | .00  | .00  | .17   | .05  | .03  | .02   | .04   | .00   | .00 |
| 16          | .02   | .00    | .03 | .00  | .00  | .09   | .05  | .03  | .02   | .04   | .00   | .00 |
| 17          | .02   | .00    | .02 | .00  | .00  | .10   | .05  | .10  | .02   | 33    | .00   | .01 |
| 18          | .02   | .00    | .04 | .00  | .00  | .12   | .05  | .07  | .08   | 32    | .00   | .01 |
| 19          | .02   | .07    | .03 | .00  | .00  | .10   | .05  | .04  | 31    | .27   | .00   | .01 |
| 20          | .02   | .09    | .02 | .00  | .00  | .06   | .05  | .03  | 4.0   | .00   | .00   | .01 |
| 21          | .02   | .08    | .03 | .00  | .00  | .04   | .04  | .03  | .19   | .00   | .00   | .01 |
| 22          | 6.8   | .06    | .04 | .00  | .00  | .03   | .04  | .03  | .06   | .72   | .00   | .01 |
| 23          | .08   | .07    | .05 | .00  | .00  | .03   | .04  | .03  | .04   | .13   | .00   | .02 |
| 24          | .07   | .12    | .04 | .00  | .00  | .02   | .04  | .04  | .04   | .01   | 22    | .02 |
| 25          | .05   | .09    | .03 | .00  | .00  | .04   | .04  | .04  | .03   | .01   | 24    | .02 |
| 26          | .04   | .07    | .04 | .00  | .00  | .07   | .04  | .03  | .02   | .01   | .30   | .02 |
| 27          | .03   | .06    | .06 | .00  | .00  | .04   | .03  | .04  | .02   | .00   | .02   | .02 |
| 28          | .02   | .05    | .07 | .00  | .00  | .01   | .03  | .04  | .02   | .00   | .01   | .02 |
| 29          | .02   | .04    | .08 | .00  | ---  | .00   | .03  | 3.5  | .02   | .00   | .00   | .02 |
| 30          | .02   | .02    | .07 | .00  | ---  | .00   | .03  | 2.9  | .02   | .00   | .00   | .02 |
| 31          | .01   | ---    | .06 | .00  | ---  | .03   | ---  | .08  | ---   | .00   | .00   | --- |
| TOTAL       | 8.89  | .89    | .85 | .61  | .00  | 34.49 | 1.62 | 7.37 | 36.40 | 74.92 | 46.33 | .29 |
| MEAN        | .29   | .03    | .03 | .02  | .00  | 1.11  | .05  | .24  | 1.21  | 2.42  | 1.49  | .01 |
| MAX         | 6.8   | .12    | .08 | .09  | .00  | 15    | .09  | 3.5  | 31    | 33    | 24    | .02 |
| MIN         | .00   | .00    | .00 | .00  | .00  | .00   | .03  | .02  | .02   | .00   | .00   | .00 |
| AC-FT       | 18    | 1.8    | 1.7 | 1.2  | .00  | 68    | 3.2  | 15   | 72    | 149   | 92    | .6  |
| CAL YR 1986 | TOTAL | 648.69 |     | MEAN | 1.78 | MAX   | 280  | MIN  | .00   | AC-FT | 1290  |     |
| WTR YR 1987 | TOTAL | 212.66 |     | MEAN | .58  | MAX   | 33   | MIN  | .00   | AC-FT | 422   |     |

## YELLOWSTONE RIVER BASIN

06316400 CRAZY WOMAN CREEK AT UPPER STATION, NEAR ARVADA, WY

LOCATION.--Lat 44°29'28", long 106°10'38", in NE1/4 SW1/4 SW1/4 sec.7, T.52 N., R.77 W., Johnson County, Hydrologic Unit 10090205, 1.1 mi upstream from Jewell Draw, 5.0 mi upstream from mouth, and 11 mi south of Arvada.

DRAINAGE AREA.--945 mi<sup>2</sup>, approximately.

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

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| OCT<br>01... | 0930 | 29                                              | 10.0                                 | 0.04                                                            | 0.20                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUN<br>24... | 1135 | 82                                              | 17.0                                 | 0.02                                                            | 0.07                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>22... | 1320 | 34                                              | 22.0                                 | <0.01                                                           | 0.08                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## 06317000 POWDER RIVER AT ARVADA, WY

LOCATION.--Lat 44°39'00", long 106°07'37", in SW1/4 SE1/4 sec.16, T.54 N., R.77 W., Sheridan County, Hydrologic Unit 10090202, on right bank 0.1 mi downstream from bridge on county road, 0.2 mi southeast of Arvada, and 0.2 mi upstream from Wild Horse Creek.

DRAINAGE AREA.--6,050 mi<sup>2</sup>, approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1919 to current year (no winter records in water years 1919-30, 1934). Records for Feb. 16-23, 1930, published in WSP 701, are unreliable and should not be used.

REVISED RECORDS.--WSP 1509: 1921(M), 1923(M), 1924-26, 1927-28(M), 1929, 1930(M), 1931, 1932(M), 1933, 1934(M), 1935-36. See PERIOD OF RECORD.

GAGE.--Water-stage recorder. Elevation of gage is 3,620 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 24, 1938, nonrecording gage at bridge 0.2 mi upstream at datum 3,621.87 ft. Oct. 24, 1938 to Apr. 27, 1983, at site 0.7 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 9-22, Dec. 3 to Mar. 5, Mar. 29-31, and July 28 to Aug. 3. Records fair except those for estimated daily discharges, which are poor. Numerous small reservoirs and diversions for irrigation of about 29,000 acres upstream from station.

AVERAGE DISCHARGE.--56 years (water years 1931-33, 1935-87), 280 ft<sup>3</sup>/s, 202,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 100,000 ft<sup>3</sup>/s, Sept. 29, 1923, gage height, 23.7 ft, from floodmarks, site and datum then in use, from rating curve extended above 20,000 ft<sup>3</sup>/s; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,800 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Oct. 24 | 1300 | 4,520                             | 5.91                | June 9  | 2030 | 4,020                             | 5.56                |
| Nov. 21 | 2400 | ice jam                           | *6.31               | July 17 | 2230 | *4,910                            | 6.10                |

Minimum daily discharge, 40 ft<sup>3</sup>/s, Dec. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN  | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|---------|------|------|-------|-------|-------|-------|-------|-------|--------|------|
| 1           | 174   | 177     | 215  | 118  | 155   | 157   | 235   | 882   | 415   | 129   | 245    | 115  |
| 2           | 177   | 165     | 212  | 116  | 157   | 212   | 543   | 852   | 377   | 116   | 340    | 95   |
| 3           | 212   | 165     | 174  | 122  | 162   | 263   | 882   | 833   | 308   | 124   | 242    | 73   |
| 4           | 341   | 160     | 146  | 132  | 197   | 360   | 613   | 786   | 249   | 217   | 161    | 73   |
| 5           | 633   | 160     | 136  | 133  | 187   | 525   | 765   | 899   | 224   | 193   | 124    | 102  |
| 6           | 462   | 177     | 138  | 125  | 210   | 1070  | 988   | 740   | 200   | 247   | 107    | 124  |
| 7           | 386   | 188     | 100  | 116  | 248   | 2220  | 990   | 599   | 188   | 193   | 87     | 114  |
| 8           | 295   | 183     | 82   | 113  | 273   | 2260  | 882   | 485   | 188   | 144   | 75     | 182  |
| 9           | 243   | 143     | 63   | 107  | 286   | 2030  | 652   | 408   | 2320  | 118   | 64     | 212  |
| 10          | 206   | 73      | 53   | 107  | 310   | 1530  | 541   | 414   | 2100  | 102   | 58     | 183  |
| 11          | 206   | 50      | 51   | 112  | 375   | 924   | 469   | 377   | 1470  | 116   | 50     | 188  |
| 12          | 194   | 66      | 40   | 122  | 565   | 636   | 460   | 335   | 1080  | 144   | 55     | 160  |
| 13          | 183   | 94      | 59   | 127  | 590   | 504   | 393   | 307   | 678   | 112   | 83     | 149  |
| 14          | 183   | 107     | 75   | 137  | 607   | 442   | 343   | 367   | 475   | 115   | 83     | 134  |
| 15          | 177   | 118     | 90   | 138  | 590   | 443   | 335   | 318   | 363   | 124   | 80     | 139  |
| 16          | 177   | 131     | 103  | 138  | 625   | 890   | 301   | 243   | 463   | 106   | 209    | 139  |
| 17          | 177   | 143     | 112  | 134  | 465   | 777   | 281   | 350   | 651   | 704   | 195    | 139  |
| 18          | 177   | 179     | 118  | 127  | 360   | 636   | 300   | 356   | 372   | 1720  | 79     | 134  |
| 19          | 183   | 230     | 120  | 126  | 317   | 549   | 461   | 859   | 888   | 220   | 55     | 129  |
| 20          | 177   | 280     | 126  | 125  | 280   | 476   | 773   | 610   | 1180  | 121   | 48     | 144  |
| 21          | 183   | 360     | 123  | 125  | 252   | 483   | 841   | 484   | 410   | 154   | 45     | 199  |
| 22          | 288   | 800     | 127  | 133  | 224   | 489   | 713   | 350   | 307   | 154   | 43     | 171  |
| 23          | 834   | 608     | 128  | 141  | 210   | 349   | 558   | 290   | 274   | 111   | 43     | 154  |
| 24          | 3370  | 476     | 129  | 146  | 198   | 321   | 484   | 348   | 230   | 91    | 48     | 144  |
| 25          | 1510  | 371     | 127  | 144  | 183   | 317   | 491   | 650   | 218   | 70    | 64     | 134  |
| 26          | 733   | 315     | 121  | 149  | 173   | 335   | 683   | 802   | 183   | 95    | 210    | 129  |
| 27          | 463   | 281     | 124  | 154  | 168   | 307   | 842   | 716   | 165   | 76    | 248    | 122  |
| 28          | 329   | 236     | 129  | 153  | 123   | 335   | 909   | 432   | 160   | 73    | 191    | 111  |
| 29          | 256   | 206     | 133  | 153  | ---   | 327   | 999   | 295   | 167   | 66    | 177    | 111  |
| 30          | 212   | 188     | 132  | 150  | ---   | 307   | 970   | 489   | 160   | 167   | 188    | 115  |
| 31          | 194   | ---     | 123  | 150  | ---   | 282   | ---   | 475   | ---   | 300   | 149    | ---  |
| TOTAL       | 13335 | 6830    | 3609 | 4073 | 8490  | 20756 | 18697 | 16351 | 16463 | 6422  | 3846   | 4118 |
| MEAN        | 430   | 228     | 116  | 131  | 303   | 670   | 623   | 527   | 549   | 207   | 124    | 137  |
| MAX         | 3370  | 800     | 215  | 154  | 625   | 2260  | 999   | 899   | 2320  | 1720  | 340    | 212  |
| MIN         | 174   | 50      | 40   | 107  | 123   | 157   | 235   | 243   | 160   | 66    | 43     | 73   |
| AC-FT       | 26450 | 13550   | 7160 | 8080 | 16840 | 41170 | 37090 | 32430 | 32650 | 12740 | 7630   | 8170 |
| CAL YR 1986 | TOTAL | 97146.5 |      | MEAN | 266   | MAX   | 3370  | MIN   | 8.3   | AC-FT | 192700 |      |
| WTR YR 1987 | TOTAL | 122990  |      | MEAN | 337   | MAX   | 3370  | MIN   | 40    | AC-FT | 244000 |      |



06317000 POWDER RIVER AT ARVADA, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-57, 1968 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: March 1949 to September 1957, October 1967 to September 1978.

SUSPENDED-SEDIMENT DISCHARGE: April 1946 to September 1957, October 1967 to September 1971, January 1975 to September 1978, April 1983 to September 1984.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) |
|-------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| OCT   |      |                                                 |                                                   |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |                                               |
| 01... | 1115 | 177                                             | 2500                                              | 11.0                                 | 510                                    | 120                                          | 52                                                   | 390                                          | 8                                       | 6.7                                                 | 260                                           | 770                                           |
| 24... | 1530 | 4500                                            | 2250                                              | 12.0                                 | 570                                    | 150                                          | 47                                                   | 340                                          | 6                                       | 7.0                                                 | 250                                           | 910                                           |
| NOV   |      |                                                 |                                                   |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |                                               |
| 20... | 1050 | 279                                             | 3410                                              | 0.0                                  | 650                                    | 130                                          | 78                                                   | 480                                          | 8                                       | 6.0                                                 | 370                                           | 810                                           |
| JAN   |      |                                                 |                                                   |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |                                               |
| 08... | 1320 | 113                                             | 3120                                              | 0.0                                  | 560                                    | 130                                          | 56                                                   | 420                                          | 8                                       | 6.1                                                 | 350                                           | 660                                           |
| FEB   |      |                                                 |                                                   |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |                                               |
| 09... | 1327 | 290                                             | 2400                                              | 0.0                                  | 460                                    | 110                                          | 45                                                   | 330                                          | 7                                       | 5.2                                                 | 220                                           | 660                                           |
| MAR   |      |                                                 |                                                   |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |                                               |
| 06... | 0915 | 620                                             | 2300                                              | 1.5                                  | 510                                    | 120                                          | 52                                                   | 320                                          | 6                                       | 6.0                                                 | 220                                           | 700                                           |
| APR   |      |                                                 |                                                   |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |                                               |
| 11... | 1100 | 482                                             | --                                                | 6.5                                  | 590                                    | 130                                          | 65                                                   | 380                                          | 7                                       | 6.8                                                 | 180                                           | 1000                                          |
| MAY   |      |                                                 |                                                   |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |                                               |
| 14... | 0950 | 313                                             | --                                                | 18.0                                 | 380                                    | 91                                           | 37                                                   | 250                                          | 6                                       | 4.8                                                 | 190                                           | 490                                           |
| 28... | 0930 | 482                                             | 2440                                              | 14.0                                 | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                            | --                                            |
| JUN   |      |                                                 |                                                   |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |                                               |
| 09... | 2100 | 3900                                            | 2450                                              | 16.0                                 | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                            | --                                            |
| 29... | 1400 | 169                                             | 2480                                              | 22.0                                 | 490                                    | 120                                          | 47                                                   | 370                                          | 7                                       | 7.3                                                 | 180                                           | 710                                           |
| AUG   |      |                                                 |                                                   |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |                                               |
| 03... | 1510 | 222                                             | 3340                                              | 26.0                                 | 660                                    | 170                                          | 57                                                   | 500                                          | 9                                       | 10                                                  | 230                                           | 1100                                          |
| SEP   |      |                                                 |                                                   |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |                                               |
| 02... | 1100 | 103                                             | 3400                                              | 18.0                                 | 740                                    | 180                                          | 71                                                   | 490                                          | 8                                       | 11                                                  | 210                                           | 1300                                          |

| DATE  | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDED<br>(T/DAY) |
|-------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|--------------------------------------------|----------------------------------------------------------------|
| OCT   |                                                     |                                                    |                                                   |                                                                    |                                                                     |                                                     |                                                   |                                                               |                                             |                                            |                                                                |
| 01... | 180                                                 | 0.6                                                | 7.6                                               | 1800                                                               | 1700                                                                | 2.4                                                 | 860                                               | 1.0                                                           | 2.2                                         | --                                         | --                                                             |
| 24... | 96                                                  | 0.6                                                | 5.9                                               | 1760                                                               | 1700                                                                | 2.4                                                 | 21400                                             | 0.9                                                           | 10.4                                        | 49600                                      | 603000                                                         |
| NOV   |                                                     |                                                    |                                                   |                                                                    |                                                                     |                                                     |                                                   |                                                               |                                             |                                            |                                                                |
| 20... | 320                                                 | 0.6                                                | 12                                                | 2110                                                               | 2100                                                                | 2.9                                                 | 1590                                              | 0.4                                                           | 0.16                                        | 544                                        | 410                                                            |
| JAN   |                                                     |                                                    |                                                   |                                                                    |                                                                     |                                                     |                                                   |                                                               |                                             |                                            |                                                                |
| 08... | 320                                                 | 0.7                                                | 11                                                | 1860                                                               | 1800                                                                | 2.5                                                 | 567                                               | 0.3                                                           | --                                          | 503                                        | 153                                                            |
| FEB   |                                                     |                                                    |                                                   |                                                                    |                                                                     |                                                     |                                                   |                                                               |                                             |                                            |                                                                |
| 09... | 210                                                 | 0.6                                                | 10                                                | 1520                                                               | 1500                                                                | 2.1                                                 | 1190                                              | 0.8                                                           | --                                          | 389                                        | 305                                                            |
| MAR   |                                                     |                                                    |                                                   |                                                                    |                                                                     |                                                     |                                                   |                                                               |                                             |                                            |                                                                |
| 06... | 210                                                 | 0.5                                                | 9.4                                               | 1590                                                               | 1500                                                                | 2.2                                                 | 2660                                              | 0.4                                                           | --                                          | 10500                                      | 17600                                                          |
| APR   |                                                     |                                                    |                                                   |                                                                    |                                                                     |                                                     |                                                   |                                                               |                                             |                                            |                                                                |
| 11... | 110                                                 | 0.6                                                | 9.1                                               | 1910                                                               | 1800                                                                | 2.6                                                 | 2490                                              | 0.4                                                           | --                                          | 8250                                       | 10700                                                          |
| MAY   |                                                     |                                                    |                                                   |                                                                    |                                                                     |                                                     |                                                   |                                                               |                                             |                                            |                                                                |
| 14... | 160                                                 | 0.6                                                | 8.9                                               | 1180                                                               | 1200                                                                | 1.6                                                 | 997                                               | 0.2                                                           | --                                          | 2540                                       | 2150                                                           |
| 28... | --                                                  | --                                                 | --                                                | --                                                                 | --                                                                  | --                                                  | --                                                | --                                                            | --                                          | 16300                                      | 21200                                                          |
| JUN   |                                                     |                                                    |                                                   |                                                                    |                                                                     |                                                     |                                                   |                                                               |                                             |                                            |                                                                |
| 09... | --                                                  | --                                                 | --                                                | --                                                                 | --                                                                  | --                                                  | --                                                | --                                                            | --                                          | 46200                                      | 486000                                                         |
| 29... | 240                                                 | 0.5                                                | 8.3                                               | 1660                                                               | 1600                                                                | 2.3                                                 | 757                                               | <0.1                                                          | --                                          | 1200                                       | 548                                                            |
| AUG   |                                                     |                                                    |                                                   |                                                                    |                                                                     |                                                     |                                                   |                                                               |                                             |                                            |                                                                |
| 03... | 230                                                 | 0.6                                                | 5.9                                               | 2250                                                               | 2200                                                                | 3.1                                                 | 1350                                              | 0.7                                                           | --                                          | 14300                                      | 8570                                                           |
| SEP   |                                                     |                                                    |                                                   |                                                                    |                                                                     |                                                     |                                                   |                                                               |                                             |                                            |                                                                |
| 02... | 240                                                 | 0.7                                                | 6.9                                               | 2430                                                               | 2400                                                                | 3.3                                                 | 676                                               | 1.0                                                           | --                                          | --                                         | --                                                             |

06317000 POWDER RIVER AT ARVADA, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

|           |      | SED. SUSP. FALL DIAM. % FINER THAN .004 MM |                                           |                                           | SED. SUSP. FALL DIAM. % FINER THAN .008 MM |                                           |                                           | SED. SUSP. FALL DIAM. % FINER THAN .016 MM |                                           |                                           |                                           |                                          |
|-----------|------|--------------------------------------------|-------------------------------------------|-------------------------------------------|--------------------------------------------|-------------------------------------------|-------------------------------------------|--------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------|
| DATE      | TIME |                                            |                                           |                                           |                                            |                                           |                                           |                                            |                                           |                                           |                                           |                                          |
|           |      | OCT 24...                                  | 1530                                      | 55                                        | 66                                         | 75                                        |                                           |                                            |                                           |                                           |                                           |                                          |
|           |      | MAR 06...                                  | 0915                                      | 26                                        | 33                                         | 41                                        |                                           |                                            |                                           |                                           |                                           |                                          |
|           |      | JUN 09...                                  | 2100                                      | 39                                        | 56                                         | 65                                        |                                           |                                            |                                           |                                           |                                           |                                          |
|           |      |                                            |                                           |                                           |                                            |                                           |                                           |                                            |                                           |                                           |                                           |                                          |
| DATE      | TIME | BED MAT. SIEVE DIAM. % FINER THAN .125 MM  | BED MAT. SIEVE DIAM. % FINER THAN .250 MM | BED MAT. SIEVE DIAM. % FINER THAN .500 MM | BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM  | BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM | BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM | BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM  | BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM | BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM | BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM | BED MAT. SIEVE DIAM. % FINER THAN 128 MM |
| AUG 03... | 1510 | 2                                          | 12                                        | 23                                        | 31                                         | 35                                        | 39                                        | 45                                         | 52                                        | 64                                        | 65                                        | 83                                       |

## YELLOWSTONE RIVER BASIN

06317300 SOURDOUGH CREEK NEAR BUFFALO, WY

LOCATION.--Lat 44°14'11", long 106°58'06", in NW1/4 NE1/4 sec.9, T.49 N., R.84 W., Johnson County, Hydrologic Unit 10090206, Big Horn National Forest, on left bank 1.7 mi upstream from culvert on U.S. Highway 16, 4.7 mi upstream from mouth, and 15.4 mi southwest of Buffalo.

DRAINAGE AREA.--5.80 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 7,980 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 1,2, 4-14, Dec. 20 to Feb. 5, Feb. 7, and Apr. 6-8, 15-18, 21. Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62 ft<sup>3</sup>/s, June 8, 1986, gage height, 2.84 ft, from rating curve extended above 24 ft<sup>3</sup>/s on basis of indirect measurement of peak flow; minimum daily discharge, 0.29 ft<sup>3</sup>/s, Jan. 11, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43 ft<sup>3</sup>/s, June 8, gage height, 2.40 ft; minimum daily, 0.52 ft<sup>3</sup>/s, Mar. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG  | SEP  |
|-------------|-------|---------|------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 1           | 1.7   | 1.8     | 1.3  | 1.0   | .80   | .55   | .55   | 6.2   | 13    | 8.8   | 3.5  | 1.9  |
| 2           | 2.0   | 1.5     | 1.3  | .96   | .80   | .52   | .58   | 10    | 12    | 8.2   | 3.2  | 1.7  |
| 3           | 2.0   | 1.7     | 1.3  | .96   | .80   | .53   | .54   | 8.3   | 12    | 7.8   | 3.0  | 1.7  |
| 4           | 2.1   | 1.8     | 1.3  | .98   | .80   | .55   | .67   | 6.4   | 11    | 8.2   | 3.1  | 2.2  |
| 5           | 2.2   | 1.6     | 1.3  | 1.0   | .80   | .58   | .77   | 6.2   | 9.9   | 7.3   | 2.9  | 2.7  |
| 6           | 2.1   | 1.4     | 1.3  | 1.0   | .58   | .66   | 1.0   | 6.9   | 11    | 6.5   | 2.7  | 2.1  |
| 7           | 2.1   | 1.3     | 1.3  | .94   | .94   | .78   | 1.2   | 7.5   | 15    | 6.1   | 2.7  | 3.8  |
| 8           | 2.0   | 1.2     | 1.3  | .90   | 1.0   | .74   | 1.3   | 8.5   | 29    | 5.6   | 3.0  | 2.5  |
| 9           | 2.0   | 1.4     | 1.3  | .90   | .87   | .67   | 1.1   | 9.6   | 21    | 5.6   | 2.7  | 2.1  |
| 10          | 2.0   | 1.3     | 1.3  | .94   | .82   | .63   | .83   | 9.6   | 20    | 8.7   | 2.5  | 2.0  |
| 11          | 1.8   | 1.5     | 1.3  | .94   | .78   | .63   | .94   | 9.2   | 19    | 13    | 2.3  | 1.9  |
| 12          | 1.8   | 1.5     | 1.3  | .94   | .78   | .66   | .88   | 10    | 18    | 8.6   | 2.3  | 1.8  |
| 13          | 1.8   | 1.6     | 1.3  | .90   | .78   | .68   | .78   | 10    | 17    | 6.7   | 2.3  | 1.7  |
| 14          | 1.8   | 1.6     | 1.3  | .88   | .77   | .68   | .97   | 9.6   | 18    | 5.8   | 2.2  | 1.7  |
| 15          | 1.8   | 1.6     | 1.3  | .84   | .73   | .68   | 2.0   | 9.9   | 17    | 5.2   | 2.6  | 1.7  |
| 16          | 1.7   | 1.6     | 1.4  | .84   | .73   | .68   | 3.0   | 11    | 16    | 4.9   | 2.5  | 1.9  |
| 17          | 1.7   | 1.5     | 1.4  | .84   | .73   | .61   | 4.2   | 15    | 15    | 5.2   | 2.1  | 2.2  |
| 18          | 1.6   | 1.5     | 1.4  | .84   | .68   | .63   | 4.8   | 13    | 14    | 7.0   | 1.9  | 2.0  |
| 19          | 1.6   | 1.5     | 1.3  | .84   | .68   | .63   | 4.1   | 12    | 17    | 4.9   | 1.8  | 2.0  |
| 20          | 2.2   | 1.5     | 1.3  | .84   | .65   | .63   | 2.5   | 13    | 15    | 4.1   | 1.6  | 2.0  |
| 21          | 2.4   | 1.5     | 1.3  | .80   | .62   | .63   | 3.4   | 14    | 14    | 3.9   | 1.7  | 1.9  |
| 22          | 3.4   | 1.4     | 1.3  | .80   | .59   | .63   | 3.9   | 12    | 13    | 3.9   | 2.1  | 1.8  |
| 23          | 4.3   | 1.4     | 1.2  | .80   | .59   | .63   | 4.7   | 11    | 12    | 3.7   | 1.9  | 1.8  |
| 24          | 2.8   | 1.4     | 1.2  | .80   | .59   | .60   | 5.4   | 11    | 11    | 4.0   | 2.1  | 1.8  |
| 25          | 2.3   | 1.4     | 1.2  | .82   | .59   | .59   | 5.7   | 15    | 11    | 3.7   | 2.6  | 1.8  |
| 26          | 2.1   | 1.4     | 1.1  | .82   | .58   | .59   | 4.9   | 14    | 10    | 3.6   | 4.3  | 1.7  |
| 27          | 2.1   | 1.4     | 1.1  | .84   | .55   | .59   | 5.1   | 12    | 9.8   | 7.3   | 3.5  | 1.7  |
| 28          | 2.1   | 1.4     | 1.1  | .84   | .55   | .59   | 6.1   | 12    | 9.6   | 5.6   | 2.3  | 1.7  |
| 29          | 2.0   | 1.4     | 1.1  | .82   | ---   | .59   | 5.8   | 14    | 9.6   | 4.6   | 2.0  | 1.7  |
| 30          | 2.0   | 1.3     | 1.2  | .82   | ---   | .55   | 5.4   | 13    | 9.5   | 5.9   | 1.9  | 1.7  |
| 31          | 2.0   | ---     | 1.1  | .80   | ---   | .57   | ---   | 12    | ---   | 4.0   | 1.9  | ---  |
| TOTAL       | 65.5  | 44.4    | 39.2 | 27.24 | 20.18 | 19.28 | 83.11 | 331.9 | 429.4 | 188.4 | 77.2 | 59.2 |
| MEAN        | 2.11  | 1.48    | 1.26 | .88   | .72   | .62   | 2.77  | 10.7  | 14.3  | 6.08  | 2.49 | 1.97 |
| MAX         | 4.3   | 1.8     | 1.4  | 1.0   | 1.0   | .78   | 6.1   | 15    | 29    | 13    | 4.3  | 3.8  |
| MIN         | 1.6   | 1.2     | 1.1  | .80   | .55   | .52   | .54   | 6.2   | 9.5   | 3.6   | 1.6  | 1.7  |
| AC-FT       | 1.0   | 88      | 78   | 54    | 40    | 38    | 165   | 658   | 852   | 374   | 153  | 117  |
| CAL YR 1986 | TOTAL | 1365.53 |      | MEAN  | 3.74  | MAX   | 49    | MIN   | .30   | AC-FT | 2710 |      |
| WTR YR 1987 | TOTAL | 1385.01 |      | MEAN  | 3.79  | MAX   | 29    | MIN   | .52   | AC-FT | 2750 |      |

06317340 LITTLE SOURDOUGH CREEK NEAR BUFFALO, WY

LOCATION.--Lat 44°15'53", long 106°55'05", in NW1/4 NW1/4 sec.36, T.50 N., R.84 W., Johnson County, Hydrologic Unit 10090206, Big Horn National Forest, on left bank 0.8 mi downstream from Rabbit Creek, 0.9 mi upstream from mouth, and 12.3 mi southwest of Buffalo.

DRAINAGE AREA.--4.53 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1985 to current year.

GAGE.--Water-stage recorder and concrete crest. Elevation of gage is 7,750 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 30 to Apr. 17. Records good except those for estimated daily discharges, which are poor. No diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37 ft<sup>3</sup>/s, Apr. 18, 1987, gage height, 5.77 ft, from rating curve extended above 10 ft<sup>3</sup>/s on basis of critical-depth backwater analysis; maximum gage height, 7.02 ft, Apr. 9, 1987 (backwater from ice); no flow for several days in 1985 and 1986.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 37 ft<sup>3</sup>/s, Apr. 18, gage height, 5.77 ft, from rating curve extended above 10 ft<sup>3</sup>/s on basis of critical-depth backwater analysis; maximum gage height, 7.02 ft, Apr. 9 (backwater from ice); minimum daily discharge, 0.04 ft<sup>3</sup>/s, Mar. 28 to Apr. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR    | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------------|-------|--------|------|------|------|------|--------|-------|-------|-------|-------|-------|
| 1           | .47   | .60    | .39  | .20  | .12  | .07  | .04    | 2.9   | 3.0   | 1.4   | .85   | .31   |
| 2           | .70   | .50    | .39  | .20  | .12  | .07  | .04    | 13    | 3.4   | 1.6   | .52   | .29   |
| 3           | .82   | .50    | .36  | .20  | .12  | .07  | .05    | 6.9   | 2.7   | 1.4   | .55   | .25   |
| 4           | 1.1   | .48    | .34  | .20  | .12  | .07  | .06    | 3.6   | 2.1   | 2.0   | .54   | .64   |
| 5           | 1.1   | .48    | .33  | .19  | .12  | .08  | .11    | 2.7   | 1.6   | 1.7   | .38   | 1.6   |
| 6           | .84   | .48    | .32  | .19  | .12  | .08  | .30    | 2.6   | 1.8   | 1.1   | .28   | .79   |
| 7           | .58   | .38    | .30  | .17  | .12  | .08  | .68    | 2.4   | 5.3   | 1.0   | .39   | 1.9   |
| 8           | .65   | .30    | .29  | .17  | .12  | .08  | .88    | 2.6   | 17    | .97   | 1.1   | 1.4   |
| 9           | 1.1   | .27    | .28  | .17  | .12  | .08  | .76    | 2.7   | 7.3   | .97   | .83   | .74   |
| 10          | .94   | .24    | .27  | .17  | .11  | .07  | .63    | 2.8   | 5.8   | 1.2   | .47   | .62   |
| 11          | .65   | .26    | .25  | .17  | .11  | .06  | .59    | 3.0   | 4.2   | 4.0   | .28   | .59   |
| 12          | .72   | .26    | .24  | .16  | .11  | .06  | .57    | 5.3   | 3.2   | 2.2   | .27   | .50   |
| 13          | .66   | .29    | .24  | .16  | .10  | .06  | .74    | 2.7   | 2.8   | 1.6   | .32   | .42   |
| 14          | .56   | .32    | .24  | .16  | .10  | .06  | 1.1    | 2.5   | 4.2   | 1.3   | .34   | .39   |
| 15          | .57   | .36    | .23  | .14  | .10  | .06  | 2.0    | 2.2   | 4.0   | .94   | .43   | .34   |
| 16          | .55   | .39    | .23  | .14  | .10  | .06  | 8.2    | 3.3   | 2.5   | .72   | .65   | .57   |
| 17          | .47   | .42    | .22  | .14  | .10  | .06  | 12     | 6.3   | 2.1   | .94   | .43   | .74   |
| 18          | .46   | .40    | .22  | .13  | .09  | .05  | 18     | 4.1   | 2.0   | 1.7   | .42   | .63   |
| 19          | .43   | .43    | .22  | .13  | .09  | .05  | 8.4    | 3.2   | 5.2   | .80   | .22   | .51   |
| 20          | 1.1   | .45    | .22  | .13  | .09  | .05  | 4.1    | 4.2   | 3.2   | .50   | .21   | .38   |
| 21          | 1.3   | .48    | .22  | .13  | .09  | .05  | 6.0    | 5.9   | 2.1   | .48   | .18   | .43   |
| 22          | 2.5   | .47    | .22  | .13  | .09  | .05  | 9.5    | 4.3   | 1.9   | .64   | .30   | .33   |
| 23          | 4.6   | .46    | .21  | .13  | .09  | .05  | 9.5    | 3.5   | 2.0   | .51   | .32   | .32   |
| 24          | 1.6   | .50    | .21  | .13  | .09  | .05  | 6.8    | 7.0   | 1.8   | .62   | .35   | .31   |
| 25          | 1.1   | .47    | .21  | .13  | .08  | .05  | 5.5    | 9.6   | 1.7   | .38   | .65   | .31   |
| 26          | .82   | .44    | .21  | .12  | .08  | .05  | 4.5    | 9.2   | 1.7   | .44   | 3.4   | .31   |
| 27          | .83   | .45    | .21  | .12  | .08  | .05  | 3.6    | 4.4   | 1.4   | .93   | 2.3   | .29   |
| 28          | .77   | .45    | .21  | .12  | .08  | .04  | 3.6    | 3.9   | 1.3   | 3.3   | .87   | .28   |
| 29          | .67   | .43    | .21  | .12  | ---  | .04  | 2.8    | 7.6   | 1.7   | 1.7   | .50   | .30   |
| 30          | .66   | .40    | .20  | .12  | ---  | .04  | 2.7    | 3.8   | 1.6   | 2.3   | .40   | .31   |
| 31          | .66   | ---    | .20  | .12  | ---  | .04  | ---    | 2.8   | ---   | 1.3   | .33   | ---   |
| TOTAL       | 29.98 | 12.36  | 7.89 | 4.69 | 2.86 | 1.83 | 113.75 | 141.0 | 100.6 | 40.64 | 19.08 | 16.80 |
| MEAN        | .97   | .41    | .25  | .15  | .10  | .06  | 3.79   | 4.55  | 3.35  | 1.31  | .62   | .56   |
| MAX         | 4.6   | .60    | .39  | .20  | .12  | .08  | 18     | 13    | 17    | 4.0   | 3.4   | 1.9   |
| MIN         | .43   | .24    | .20  | .12  | .08  | .04  | .04    | 2.2   | 1.3   | .38   | .18   | .25   |
| AC-FT       | 59    | 25     | 16   | 9.3  | 5.7  | 3.6  | 226    | 280   | 200   | 81    | 38    | 33    |
| CAL YR 1986 | TOTAL | 324.69 |      | MEAN | .89  | MAX  | 13     | MIN   | .00   | AC-FT | 644   |       |
| WTR YR 1987 | TOTAL | 491.48 |      | MEAN | 1.35 | MAX  | 18     | MIN   | .04   | AC-FT | 975   |       |

06318500 CLEAR CREEK NEAR BUFFALO, WY

LOCATION.--Lat 44°19'58", long 106°46'36", in SE1/4 SW1/4 NW1/4 sec.6, T.50 N., R.82 W., Johnson County, Hydrologic Unit 10090206, on left bank 500 ft upstream from abandoned Pacific Power & Light Company powerplant, 2.0 mi downstream from Mosier Gulch, and 4.0 mi west of Buffalo.

DRAINAGE AREA.--120 mi<sup>2</sup>.

PERIOD OF RECORD.--April to September 1894, May to September 1896, May 1897 to December 1899, June 1917 to October 1927, April 1938 to current year. Published as "at Buffalo" 1897-98. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1896, 1898, 1938, 1939(M), 1945(M). WSP 1729: 1921.

GAGE.--Water-stage recorder. Elevation of gage is 5,184.83 ft above National Geodetic Vertical Datum of 1929. See WSP 1916 for history of changes prior to 1961.

REMARKS.--Estimated daily discharges: Nov. 9-19, Dec. 1, 3-21, Jan. 13-20, Feb. 20-22, 26-28, and Mar. 22, 23, 29, 30. Records good except those for estimated daily discharges, which are poor. Diversions upstream from station for irrigation of about 330 acres, of which about 320 acres are downstream from station.

AVERAGE DISCHARGE.--61 years (water years 1898-99, 1918-27, 1939-87), 63.5 ft<sup>3</sup>/s, 46,020 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,420 ft<sup>3</sup>/s, June 15, 1963, gage height, 6.19 ft, from rating curve extended above 900 ft<sup>3</sup>/s on basis of velocity-area study; no flow Feb. 14-16, 1939, Nov. 12, 13, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft<sup>3</sup>/s and maximum (\*):

| Date                                                                  | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                        | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|-----------------------------------------------------------------------|------|-----------------------------------|---------------------|---------------------------------------------|------|-----------------------------------|---------------------|
| June 8                                                                | 0600 | *813                              | *4.24               | No other peaks greater than base discharge. |      |                                   |                     |
| Minimum daily discharge, 11 ft <sup>3</sup> /s, Jan. 15, 16, Feb. 27. |      |                                   |                     |                                             |      |                                   |                     |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN  | FEB  | MAR  | APR  | MAY   | JUN   | JUL   | AUG   | SEP  |
|-------------|-------|---------|------|------|------|------|------|-------|-------|-------|-------|------|
| 1           | 34    | 29      | 19   | 14   | 14   | 13   | 15   | 157   | 174   | 71    | 70    | 59   |
| 2           | 38    | 24      | 19   | 13   | 14   | 13   | 15   | 231   | 149   | 73    | 63    | 57   |
| 3           | 38    | 36      | 18   | 13   | 14   | 13   | 15   | 216   | 129   | 71    | 60    | 54   |
| 4           | 39    | 29      | 16   | 13   | 14   | 15   | 22   | 163   | 112   | 71    | 58    | 58   |
| 5           | 39    | 29      | 18   | 14   | 13   | 18   | 37   | 141   | 105   | 70    | 55    | 68   |
| 6           | 37    | 29      | 19   | 14   | 13   | 25   | 44   | 136   | 114   | 63    | 52    | 60   |
| 7           | 35    | 27      | 20   | 14   | 14   | 34   | 46   | 116   | 161   | 61    | 52    | 67   |
| 8           | 33    | 21      | 19   | 14   | 14   | 28   | 49   | 124   | 655   | 59    | 57    | 68   |
| 9           | 35    | 18      | 17   | 14   | 14   | 19   | 44   | 139   | 423   | 58    | 52    | 64   |
| 10          | 34    | 15      | 16   | 14   | 14   | 17   | 33   | 148   | 341   | 89    | 47    | 61   |
| 11          | 30    | 16      | 17   | 14   | 14   | 16   | 32   | 135   | 262   | 252   | 44    | 59   |
| 12          | 26    | 16      | 17   | 14   | 14   | 16   | 26   | 152   | 240   | 216   | 47    | 57   |
| 13          | 33    | 18      | 17   | 13   | 14   | 17   | 23   | 158   | 218   | 156   | 45    | 54   |
| 14          | 30    | 20      | 17   | 12   | 14   | 21   | 23   | 141   | 219   | 129   | 44    | 52   |
| 15          | 28    | 20      | 17   | 11   | 14   | 17   | 42   | 146   | 196   | 115   | 47    | 49   |
| 16          | 27    | 22      | 17   | 11   | 13   | 16   | 67   | 170   | 174   | 102   | 51    | 51   |
| 17          | 27    | 23      | 17   | 12   | 13   | 16   | 112  | 309   | 156   | 100   | 47    | 55   |
| 18          | 24    | 24      | 16   | 12   | 13   | 16   | 116  | 239   | 135   | 142   | 45    | 51   |
| 19          | 24    | 24      | 15   | 12   | 13   | 16   | 83   | 186   | 179   | 114   | 44    | 48   |
| 20          | 29    | 25      | 15   | 13   | 13   | 15   | 47   | 159   | 170   | 90    | 41    | 46   |
| 21          | 34    | 25      | 16   | 13   | 13   | 16   | 41   | 184   | 132   | 80    | 38    | 44   |
| 22          | 37    | 24      | 16   | 13   | 13   | 15   | 58   | 149   | 118   | 93    | 44    | 43   |
| 23          | 55    | 24      | 16   | 12   | 13   | 14   | 75   | 121   | 113   | 79    | 45    | 41   |
| 24          | 43    | 23      | 16   | 13   | 13   | 15   | 86   | 116   | 100   | 70    | 48    | 40   |
| 25          | 36    | 22      | 15   | 13   | 13   | 15   | 98   | 151   | 91    | 64    | 52    | 39   |
| 26          | 32    | 23      | 14   | 13   | 12   | 16   | 111  | 167   | 83    | 61    | 84    | 37   |
| 27          | 30    | 21      | 14   | 13   | 11   | 16   | 110  | 158   | 77    | 81    | 95    | 36   |
| 28          | 30    | 20      | 14   | 13   | 12   | 16   | 151  | 135   | 74    | 109   | 77    | 35   |
| 29          | 33    | 20      | 13   | 13   | ---  | 15   | 152  | 184   | 76    | 90    | 69    | 34   |
| 30          | 34    | 20      | 14   | 13   | ---  | 15   | 145  | 171   | 74    | 92    | 64    | 34   |
| 31          | 33    | ---     | 14   | 13   | ---  | 15   | ---  | 168   | ---   | 78    | 61    | ---  |
| TOTAL       | 1037  | 687     | 508  | 403  | 373  | 529  | 1918 | 5070  | 5250  | 2999  | 1698  | 1521 |
| MEAN        | 33.5  | 22.9    | 16.4 | 13.0 | 13.3 | 17.1 | 63.9 | 164   | 175   | 96.7  | 54.8  | 50.7 |
| MAX         | 55    | 36      | 20   | 14   | 14   | 34   | 152  | 309   | 655   | 252   | 95    | 68   |
| MIN         | 24    | 15      | 13   | 11   | 11   | 13   | 15   | 116   | 74    | 58    | 38    | 34   |
| AC-FT       | 2060  | 1360    | 1010 | 799  | 740  | 1050 | 3800 | 10060 | 10410 | 5950  | 3370  | 3020 |
| CAL YR 1986 | TOTAL | 23261.5 |      | MEAN | 63.7 | MAX  | 726  | MIN   | 9.0   | AC-FT | 46140 |      |
| WTR YR 1987 | TOTAL | 21993   |      | MEAN | 60.3 | MAX  | 655  | MIN   | 11    | AC-FT | 43620 |      |

06320000 ROCK CREEK NEAR BUFFALO, WY

LOCATION.--Lat 44°27'22", long 106°52'42", in NW1/4 NW1/4 NW1/4 sec.29, T.52 N., R.83 W., Johnson County, Hydrologic Unit 10090206, on left bank 300 ft downstream from confluence of North and South Forks and 11.5 mi northwest of Buffalo.

DRAINAGE AREA.--60.0 mi<sup>2</sup>.

PERIOD OF RECORD.--April to August 1941, April to December 1942, May 1943 to November 1944, April 1945 to current year (no winter records since 1971). Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Elevation of gage is 5,280 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Jan. 8, 1944, nonrecording gages 600 ft upstream on North and South Forks at different datums. Jan. 8, 1944, to Sept. 30, 1952, water-stage recorder at present site at datum 0.72 ft lower.

REMARKS.--No estimated daily discharges. Records good. Water is imported into drainage basin upstream from station from South Piney Creek. Diversions for irrigation of about 250 acres upstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--27 years (water years 1944, 1946-71), 36.4 ft<sup>3</sup>/s, 26,370 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,860 ft<sup>3</sup>/s, June 15, 1963, gage height, 7.98 ft, from rating curve extended above 450 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow; minimum daily, 0.50 ft<sup>3</sup>/s, Sept. 19, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1941, about 8.05 ft, probably during 1944.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 436 ft<sup>3</sup>/s, June 8, gage height, 5.86 ft; minimum daily during period of operation, 5.3 ft<sup>3</sup>/s, Apr. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR   | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|-------|------|------|------|------|------|
| 1     |     |     |     |     |     |     | 5.6   | 77   | 120  | 46   | 21   | 38   |
| 2     |     |     |     |     |     |     | 5.4   | 99   | 102  | 52   | 20   | 36   |
| 3     |     |     |     |     |     |     | 5.3   | 73   | 95   | 48   | 18   | 36   |
| 4     |     |     |     |     |     |     | 6.8   | 60   | 89   | 48   | 16   | 40   |
| 5     |     |     |     |     |     |     | 9.6   | 61   | 86   | 49   | 16   | 45   |
| 6     |     |     |     |     |     |     | 12    | 61   | 86   | 40   | 16   | 40   |
| 7     |     |     |     |     |     |     | 13    | 61   | 119  | 37   | 17   | 44   |
| 8     |     |     |     |     |     |     | 13    | 61   | 316  | 35   | 19   | 44   |
| 9     |     |     |     |     |     |     | 13    | 64   | 260  | 35   | 17   | 41   |
| 10    |     |     |     |     |     |     | 10    | 67   | 198  | 45   | 15   | 41   |
| 11    |     |     |     |     |     |     | 10    | 57   | 171  | 81   | 15   | 47   |
| 12    |     |     |     |     |     |     | 9.4   | 57   | 154  | 70   | 24   | 46   |
| 13    |     |     |     |     |     |     | 7.9   | 57   | 138  | 54   | 25   | 44   |
| 14    |     |     |     |     |     |     | 7.9   | 55   | 129  | 49   | 30   | 44   |
| 15    |     |     |     |     |     |     | 13    | 67   | 118  | 47   | 31   | 39   |
| 16    |     |     |     |     |     |     | 20    | 74   | 106  | 46   | 31   | 22   |
| 17    |     |     |     |     |     |     | 29    | 147  | 97   | 48   | 30   | 23   |
| 18    |     |     |     |     |     |     | 37    | 94   | 93   | 58   | 31   | 20   |
| 19    |     |     |     |     |     |     | 36    | 79   | 141  | 49   | 33   | 18   |
| 20    |     |     |     |     |     |     | 25    | 75   | 102  | 43   | 33   | 18   |
| 21    |     |     |     |     |     |     | 22    | 83   | 81   | 42   | 33   | 16   |
| 22    |     |     |     |     |     |     | 27    | 78   | 78   | 45   | 35   | 16   |
| 23    |     |     |     |     |     |     | 38    | 70   | 75   | 40   | 36   | 16   |
| 24    |     |     |     |     |     |     | 52    | 67   | 69   | 38   | 43   | 15   |
| 25    |     |     |     |     |     |     | 57    | 90   | 63   | 33   | 46   | 15   |
| 26    |     |     |     |     |     |     | 61    | 97   | 59   | 25   | 48   | 14   |
| 27    |     |     |     |     |     |     | 62    | 133  | 58   | 38   | 53   | 14   |
| 28    |     |     |     |     |     |     | 82    | 112  | 60   | 34   | 46   | 14   |
| 29    |     |     |     |     |     |     | 74    | 126  | 61   | 24   | 42   | 14   |
| 30    |     |     |     |     |     |     | 73    | 125  | 56   | 26   | 40   | 13   |
| 31    |     |     |     |     |     |     | ---   | 118  | ---  | 24   | 39   | ---  |
| TOTAL |     |     |     |     |     |     | 836.9 | 2545 | 3380 | 1349 | 919  | 873  |
| MEAN  |     |     |     |     |     |     | 27.9  | 82.1 | 113  | 43.5 | 29.6 | 29.1 |
| MAX   |     |     |     |     |     |     | 82    | 147  | 316  | 81   | 53   | 47   |
| MIN   |     |     |     |     |     |     | 5.3   | 55   | 56   | 24   | 15   | 13   |
| AC-FT |     |     |     |     |     |     | 1660  | 5050 | 6700 | 2680 | 1820 | 1730 |





06320400 CLEAR CREEK AT UCROSS, WY

LOCATION.--Lat 44°33'09", long 106°32'06", in NE1/4 SW1/4 NE1/4 sec.19, T.53 N., R.80 W., Johnson County, Hydrologic Unit 10090206, at former gaging station, 0.5 mi upstream from Sheridan-Johnson County line, 0.7 mi south of Ucross, and 1.6 mi upstream from Piney Creek.

DRAINAGE AREA.--409 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976-81, October 1982 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>24... | 1510 | 149                                             | 17.0                                 | <0.01                                                           | 0.02                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>22... | 0755 | 60                                              | 17.0                                 | <0.01                                                           | 0.03                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>26... | 1045 | 83                                              | 6.0                                  | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## 06320500 SOUTH PINEY CREEK AT WILLOW PARK, WY

LOCATION.--Lat 44°27'59", long 107°02'03", in NW1/4 sec.24, T.52 N., R.85 W., Johnson County, Hydrologic Unit 10090206, Bighorn National Forest, on left bank about 300 ft downstream from Willow Park Dam, 1.4 mi upstream from Kearny Creek, and 10 mi southwest of Story.

DRAINAGE AREA.--33.6 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1945 to September 1957 (no winter records prior to 1948), October 1959 to current year (no winter records since 1971).

REVISED RECORDS.--WSP 1309: 1949(M). WSP 1709: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 8,540 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1957, at site about 600 ft upstream at different datum. Oct. 1, 1959, to Sept. 30, 1965, at present site at datum 1.00 ft higher.

REMARKS.--Estimated daily discharges: May 1-7. Records good except those for estimated daily discharges, which are poor. Some regulation by Cloud Peak Reservoir, capacity, 3,385 acre-ft, and Willow Park Reservoir, capacity, 4,457 acre-ft. Storage began in Willow Park Reservoir in April 1959. Cloud Peak Reservoir enlarged December 1958. Water released from storage in Cloud Peak Reservoir is diverted just downstream from station into Rock Creek basin.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--22 years (water years 1948-57, 1960-71), 42.4 ft<sup>3</sup>/s, 30,720 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,620 ft<sup>3</sup>/s, June 15, 1963, gage height, 5.68 ft, present datum, from rating curve extended above 360 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow; minimum daily, 0.30 ft<sup>3</sup>/s, Nov. 19-21, 1966, but may have been less on individual days of no gage-height record; minimum daily determined prior to construction of Willow Park Reservoir, 4.5 ft<sup>3</sup>/s, Mar. 1 to Apr. 5, 1955, but may have been less during years of no winter records.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 371 ft<sup>3</sup>/s, June 9, gage height, 3.87 ft; minimum daily during period of operation, 5.3 ft<sup>3</sup>/s, May 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY    | JUN  | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|-----|--------|------|------|------|------|
| 1     |     |     |     |     |     |     |     | 5.3    | 112  | 53   | 103  | 68   |
| 2     |     |     |     |     |     |     |     | 5.5    | 99   | 62   | 101  | 67   |
| 3     |     |     |     |     |     |     |     | 5.5    | 80   | 59   | 96   | 67   |
| 4     |     |     |     |     |     |     |     | 5.7    | 68   | 63   | 81   | 66   |
| 5     |     |     |     |     |     |     |     | 5.7    | 66   | 75   | 71   | 66   |
| 6     |     |     |     |     |     |     |     | 6.0    | 71   | 70   | 67   | 66   |
| 7     |     |     |     |     |     |     |     | 10     | 96   | 65   | 64   | 65   |
| 8     |     |     |     |     |     |     |     | 78     | 276  | 60   | 64   | 66   |
| 9     |     |     |     |     |     |     |     | 105    | 328  | 58   | 63   | 67   |
| 10    |     |     |     |     |     |     |     | 124    | 224  | 66   | 63   | 66   |
| 11    |     |     |     |     |     |     |     | 100    | 167  | 126  | 64   | 65   |
| 12    |     |     |     |     |     |     |     | 91     | 134  | 164  | 66   | 65   |
| 13    |     |     |     |     |     |     |     | 96     | 124  | 131  | 69   | 64   |
| 14    |     |     |     |     |     |     |     | 94     | 118  | 100  | 71   | 65   |
| 15    |     |     |     |     |     |     |     | 95     | 111  | 82   | 71   | 66   |
| 16    |     |     |     |     |     |     |     | 114    | 100  | 73   | 72   | 66   |
| 17    |     |     |     |     |     |     |     | 218    | 94   | 75   | 73   | 66   |
| 18    |     |     |     |     |     |     |     | 176    | 99   | 96   | 77   | 65   |
| 19    |     |     |     |     |     |     |     | 139    | 133  | 93   | 81   | 64   |
| 20    |     |     |     |     |     |     |     | 118    | 112  | 81   | 82   | 63   |
| 21    |     |     |     |     |     |     |     | 121    | 91   | 78   | 84   | 63   |
| 22    |     |     |     |     |     |     |     | 108    | 79   | 86   | 84   | 62   |
| 23    |     |     |     |     |     |     |     | 87     | 73   | 87   | 85   | 61   |
| 24    |     |     |     |     |     |     |     | 79     | 66   | 80   | 87   | 60   |
| 25    |     |     |     |     |     |     |     | 91     | 59   | 73   | 91   | 54   |
| 26    |     |     |     |     |     |     |     | 99     | 54   | 73   | 96   | 49   |
| 27    |     |     |     |     |     |     |     | 112    | 52   | 81   | 98   | 48   |
| 28    |     |     |     |     |     |     |     | 100    | 50   | 88   | 96   | 48   |
| 29    |     |     |     |     |     |     |     | 103    | 52   | 93   | 91   | 48   |
| 30    |     |     |     |     |     |     |     | 107    | 52   | 99   | 88   | 27   |
| 31    |     |     |     |     |     |     |     | 100    | ---  | 103  | 82   | ---  |
| TOTAL |     |     |     |     |     |     |     | 2698.7 | 3240 | 2593 | 2481 | 1833 |
| MEAN  |     |     |     |     |     |     |     | 87.1   | 108  | 83.6 | 80.0 | 61.1 |
| MAX   |     |     |     |     |     |     |     | 218    | 328  | 164  | 103  | 68   |
| MIN   |     |     |     |     |     |     |     | 5.3    | 50   | 53   | 63   | 27   |
| AC-FT |     |     |     |     |     |     |     | 5350   | 6430 | 5140 | 4920 | 3640 |

## 06323000 PINEY CREEK AT KEARNY, WY

LOCATION.--Lat 44°32'08", long 106°49'18", in NE1/4 NE1/4 SW1/4 sec.26, T.53 N., R.83 W., Johnson County, Hydrologic Unit 10090206, on right bank at Kearny, 300 ft northeast of Historical Monument and 2.0 mi upstream from Little Piney Creek.

DRAINAGE AREA.--118 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1902 to June 1906, June to August 1910, May 1911 to July 1917, May 1919 to September 1923 (no winter records), October 1940 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1176: 1944. WSP 1309: 1913(M). WSP 1509: 1906, 1920(M), 1941(M), 1942, 1943(M). WSP 1916: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,655.11 ft above National Geodetic Vertical Datum of 1929. Sept. 6, 1902, to June 30, 1906, nonrecording gage at site 50 ft upstream at different datum. May 14, 1911, to July 31, 1917, and May 1, 1919, to Sept. 30, 1923, nonrecording gage at site 50 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Nov. 5-21, 26 and Dec. 4 to Mar. 2. Records good except those for estimated daily discharges, which are poor. Some regulation by Cloud Peak Reservoir, capacity, 3,385 acre-ft, Willow Park Reservoir, capacity, 4,457 acre-ft, and Kearny Lake, capacity, 1,860 acre-ft. Diversion upstream from station from South Piney Creek into Rock Creek basin for irrigation. Diversions upstream from station for irrigation of about 240 acres, of which about 90 acres are downstream from station. Record includes flow in bypass channel (Spring Creek), 300 ft left of main channel.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--46 years (water years 1941-87), 85.5 ft<sup>3</sup>/s, 61,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,410 ft<sup>3</sup>/s, June 15, 1963, gage height, 6.05 ft, from rating curve extended above 1,800 ft<sup>3</sup>/s; minimum daily, 1.9 ft<sup>3</sup>/s, Oct. 3, 1981, Sept. 14-18, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 412 ft<sup>3</sup>/s, June 9, gage height, 3.18 ft; maximum gage height, 3.26 ft, Dec. 17 (backwater from ice); minimum daily discharge, 7.6 ft<sup>3</sup>/s, Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT    | NOV     | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN    | JUL   | AUG   | SEP  |
|-------------|--------|---------|------|------|------|------|------|------|--------|-------|-------|------|
| 1           | 7.6    | 33      | 40   | 25   | 23   | 22   | 44   | 251  | 97     | 10    | 55    | 102  |
| 2           | 9.4    | 30      | 34   | 24   | 22   | 26   | 42   | 283  | 75     | 31    | 56    | 117  |
| 3           | 9.7    | 39      | 31   | 25   | 22   | 30   | 44   | 210  | 60     | 21    | 57    | 119  |
| 4           | 12     | 34      | 29   | 24   | 22   | 33   | 51   | 178  | 54     | 11    | 49    | 115  |
| 5           | 22     | 33      | 30   | 25   | 21   | 37   | 60   | 167  | 51     | 17    | 40    | 94   |
| 6           | 19     | 33      | 29   | 25   | 22   | 39   | 63   | 155  | 38     | 23    | 38    | 68   |
| 7           | 25     | 30      | 28   | 23   | 23   | 44   | 64   | 138  | 55     | 16    | 35    | 63   |
| 8           | 39     | 29      | 28   | 22   | 23   | 43   | 65   | 157  | 232    | 11    | 35    | 39   |
| 9           | 40     | 26      | 26   | 22   | 22   | 38   | 66   | 180  | 386    | 26    | 31    | 32   |
| 10          | 43     | 24      | 25   | 23   | 22   | 38   | 60   | 200  | 344    | 25    | 27    | 27   |
| 11          | 42     | 24      | 26   | 24   | 23   | 37   | 61   | 162  | 295    | 103   | 27    | 25   |
| 12          | 36     | 24      | 25   | 26   | 23   | 37   | 58   | 125  | 258    | 132   | 30    | 22   |
| 13          | 44     | 25      | 26   | 27   | 25   | 39   | 55   | 113  | 181    | 97    | 29    | 18   |
| 14          | 43     | 26      | 27   | 26   | 25   | 40   | 56   | 71   | 126    | 62    | 25    | 16   |
| 15          | 41     | 26      | 26   | 24   | 25   | 40   | 62   | 44   | 117    | 38    | 26    | 17   |
| 16          | 41     | 27      | 26   | 22   | 23   | 41   | 74   | 47   | 107    | 20    | 26    | 33   |
| 17          | 39     | 28      | 25   | 22   | 23   | 39   | 97   | 211  | 109    | 22    | 25    | 33   |
| 18          | 38     | 27      | 24   | 23   | 24   | 40   | 123  | 134  | 121    | 37    | 24    | 31   |
| 19          | 38     | 29      | 24   | 23   | 23   | 41   | 132  | 95   | 205    | 32    | 31    | 29   |
| 20          | 38     | 29      | 25   | 22   | 23   | 38   | 111  | 71   | 162    | 17    | 32    | 27   |
| 21          | 39     | 29      | 24   | 22   | 22   | 36   | 107  | 86   | 121    | 16    | 41    | 25   |
| 22          | 39     | 33      | 24   | 21   | 22   | 41   | 113  | 74   | 107    | 38    | 54    | 27   |
| 23          | 41     | 35      | 25   | 22   | 23   | 45   | 132  | 57   | 97     | 36    | 55    | 34   |
| 24          | 39     | 35      | 25   | 23   | 21   | 44   | 152  | 53   | 74     | 25    | 61    | 36   |
| 25          | 38     | 35      | 25   | 24   | 20   | 44   | 178  | 71   | 53     | 15    | 82    | 36   |
| 26          | 36     | 32      | 24   | 23   | 20   | 44   | 201  | 75   | 38     | 11    | 135   | 30   |
| 27          | 35     | 33      | 24   | 23   | 20   | 42   | 209  | 115  | 33     | 18    | 145   | 30   |
| 28          | 35     | 31      | 25   | 24   | 21   | 43   | 221  | 107  | 33     | 42    | 150   | 30   |
| 29          | 34     | 30      | 25   | 24   | ---  | 44   | 221  | 107  | 25     | 47    | 138   | 31   |
| 30          | 34     | 30      | 25   | 22   | ---  | 48   | 233  | 115  | 9.7    | 54    | 132   | 31   |
| 31          | 34     | ---     | 26   | 22   | ---  | 46   | ---  | 97   | ---    | 59    | 123   | ---  |
| TOTAL       | 1030.7 | 899     | 826  | 727  | 628  | 1219 | 3155 | 3949 | 3663.7 | 1112  | 1814  | 1337 |
| MEAN        | 33.2   | 30.0    | 26.6 | 23.5 | 22.4 | 39.3 | 105  | 127  | 122    | 35.9  | 58.5  | 44.6 |
| MAX         | 44     | 39      | 40   | 27   | 25   | 48   | 233  | 283  | 386    | 132   | 150   | 119  |
| MIN         | 7.6    | 24      | 24   | 21   | 20   | 22   | 42   | 44   | 9.7    | 10    | 24    | 16   |
| AC-FT       | 2040   | 1780    | 1640 | 1440 | 1250 | 2420 | 6260 | 7830 | 7270   | 2210  | 3600  | 2650 |
| CAL YR 1986 | TOTAL  | 26749.7 |      | MEAN | 73.3 | MAX  | 1020 | MIN  | 7.6    | AC-FT | 53060 |      |
| WTR YR 1987 | TOTAL  | 20360.4 |      | MEAN | 55.8 | MAX  | 386  | MIN  | 7.6    | AC-FT | 40380 |      |

## YELLOWSTONE RIVER BASIN

06323500 PINEY CREEK AT UCROSS, WY

LOCATION.--Lat 44°33'45", long 106°32'25", in SW1/4 NW1/4 SE1/4 sec.18, T.53 N., R.80 W., Sheridan County, Hydrologic Unit 10090206, at Ucross, 140 ft upstream from bridge on U.S. Highways 14 and 16, and 1.0 mi upstream from mouth.

DRAINAGE AREA.--267 mi<sup>2</sup>.

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

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>24... | 1405 | 59                                              | 18.0                                 | <0.01                                                           | 0.02                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>22... | 0900 | 37                                              | 17.0                                 | <0.01                                                           | 0.02                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>26... | 0930 | 95                                              | 12.0                                 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

06324000 CLEAR CREEK NEAR ARVADA, WY

LOCATION.--Lat 44°52'18", long 106°04'56", in SE1/4 sec.36, T.57 N., R.77 W., Sheridan County, Hydrologic Unit 10090206, 600 ft downstream from Cabin Creek, 1.8 mi upstream from mouth, and 16 mi north of Arvada.

DRAINAGE AREA.--1,110 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--Water years 1949-54, 1967 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| MAY<br>28... | 1300 | 90                                              | 16.0                                 | <0.1                                                 | 0.07                                                 | 0.83                                                 | 0.9                                                                | 0.13                                        |
| JUN<br>29... | 1135 | 43                                              | 20.5                                 | <0.1                                                 | 0.06                                                 | 1.2                                                  | 1.3                                                                | <0.01                                       |

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| OCT<br>01... | 1315 | 138                                             | 12.0                                 | <0.01                                                           | 0.03                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUN<br>29... | 1135 | 43                                              | 20.5                                 | <0.01                                                           | 0.45                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>22... | 1105 | 76                                              | 21.0                                 | <0.01                                                           | 0.27                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## 06324500 POWDER RIVER AT MOORHEAD, MT

LOCATION.--Lat 45°04'04", long 105°52'10", in NW1/4 SE1/4 NW1/4 sec.8, T.9 S., R.48 E., Powder River County, Hydrologic Unit 10090207, on left bank 500 ft downstream from discontinued post office at Moorhead, 6.2 mi upstream from Buffalo Creek, and at mile 184.8.

DRAINAGE AREA.--8,088 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1929 to September 1972, October 1974 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1932(M). WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,334.6 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Aug. 28, 1931, nonrecording gage at site 0.3 mi upstream at different datum. Aug. 28, 1931, to Mar. 21, 1956, water-stage recorder at site 1.2 mi upstream at different datum. Mar. 22 to July 24, 1956, nonrecording gage at site 0.3 mi downstream at different datum. July 25 to Sept. 12, 1956, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Nov. 10 to Feb. 15. Water-discharge records good except those for period of estimated daily discharges, which are poor. Some regulation by three reservoirs in Wyoming with combined usable capacity of 36,800 acre-ft. Diversions for irrigation of about 66,300 acres upstream from station.

AVERAGE DISCHARGE.--56 years, 458 ft<sup>3</sup>/s, 331,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft<sup>3</sup>/s, May 20, 1978, gage height, 15.24 ft; maximum gage height, 17.7 ft, Mar. 21, 1956, site and datum then in use (ice jam); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 30, 1923, reached a stage of 19 ft, site and datum used 1931-56, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,700 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Oct. 24 | 1930 | 3,770                             | 5.22                | June 18 | 2230 | 4,410                             | 5.58                |
| Nov. 22 | ---- | unknown                           | ice jam             | June 10 | 0830 | 4,760                             | 5.77                |
| Feb. 15 | ---- | unknown                           | ice jam             | July 18 | 0300 | *11,400                           | *8.69               |

Minimum daily discharge, 4.0 ft<sup>3</sup>/s, Nov. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 327   | 422    | e250  | e200  | e270  | 214   | 398   | 1130  | 526   | 179   | 313   | 387   |
| 2     | 312   | 393    | e230  | e210  | e300  | 202   | 416   | 1080  | 571   | 176   | 372   | 372   |
| 3     | 319   | 392    | e180  | e210  | e320  | 346   | 838   | 1110  | 488   | 182   | 373   | 349   |
| 4     | 345   | 380    | e130  | e230  | e340  | 527   | 806   | 1120  | 415   | 188   | 344   | 347   |
| 5     | 578   | 375    | e150  | e220  | e360  | 757   | 692   | 1030  | 363   | 289   | 270   | 386   |
| 6     | 625   | 389    | e150  | e230  | e380  | 1110  | 920   | 948   | 319   | 241   | 212   | 381   |
| 7     | 558   | 449    | e140  | e220  | e400  | 1870  | 1030  | 757   | 291   | 272   | 189   | 420   |
| 8     | 455   | 465    | e120  | e210  | e380  | 2390  | 992   | 653   | 282   | 251   | 171   | 370   |
| 9     | 391   | 419    | e100  | e190  | e400  | 2260  | 899   | 513   | 1030  | 205   | 151   | 396   |
| 10    | 361   | e10    | e80   | e170  | e430  | 2230  | 737   | 437   | 3780  | 219   | 140   | 404   |
| 11    | 340   | e4.0   | e140  | e180  | e420  | 1490  | 664   | 417   | 2070  | 196   | 131   | 365   |
| 12    | 332   | e50    | e120  | e210  | e410  | 1110  | 633   | 405   | 1900  | 275   | 219   | 373   |
| 13    | 321   | e30    | e130  | e250  | e500  | 832   | 572   | 333   | 1400  | 418   | 159   | 364   |
| 14    | 313   | e100   | e150  | e200  | e800  | 734   | 507   | 307   | 1080  | 441   | 142   | 370   |
| 15    | 308   | e200   | e160  | e150  | e1200 | 663   | 468   | 326   | 851   | 379   | 165   | 351   |
| 16    | 308   | e300   | e180  | e100  | 1080  | 742   | 440   | 268   | 745   | 359   | 159   | 332   |
| 17    | 305   | e280   | e190  | e120  | 920   | 1050  | 409   | 290   | 925   | 324   | 232   | 342   |
| 18    | 301   | e260   | e210  | e140  | 844   | 1010  | 402   | 349   | 1050  | 5340  | 237   | 352   |
| 19    | 299   | e310   | e200  | e130  | 683   | 831   | 435   | 696   | 1250  | 1100  | 179   | 353   |
| 20    | 294   | e300   | e210  | e120  | 552   | 755   | 645   | 838   | 1780  | 559   | 143   | 345   |
| 21    | 291   | e350   | e220  | e130  | 475   | 699   | 786   | 657   | 1050  | 361   | 128   | 346   |
| 22    | 296   | e320   | e230  | e120  | 403   | 673   | 795   | 517   | 694   | 337   | 117   | 395   |
| 23    | 639   | e320   | e240  | e110  | 426   | 623   | 641   | 464   | 560   | 313   | 107   | 374   |
| 24    | 1990  | e350   | e260  | e120  | 370   | 518   | 563   | 410   | 478   | 253   | 107   | 356   |
| 25    | 2410  | e320   | e240  | e130  | 351   | 468   | 506   | 453   | 423   | 226   | 187   | 336   |
| 26    | 1190  | e330   | e230  | e140  | 322   | 480   | 536   | 682   | 372   | 224   | 234   | 318   |
| 27    | 846   | e330   | e220  | e160  | 284   | 476   | 708   | 765   | 305   | 242   | 373   | 307   |
| 28    | 657   | e290   | e230  | e180  | 264   | 459   | 789   | 652   | 261   | 568   | 436   | 290   |
| 29    | 548   | e280   | e220  | e200  | ---   | 519   | 927   | 526   | 235   | 970   | 418   | 279   |
| 30    | 479   | e270   | e210  | e230  | ---   | 533   | 1240  | 398   | 207   | 485   | 417   | 268   |
| 31    | 439   | ---    | e200  | e250  | ---   | 467   | ---   | 665   | ---   | 350   | 431   | ---   |
| TOTAL | 17177 | 8688.0 | 5720  | 5460  | 13884 | 27038 | 20394 | 19196 | 25701 | 15922 | 7256  | 10628 |
| MEAN  | 554   | 290    | 185   | 176   | 496   | 872   | 680   | 619   | 857   | 514   | 234   | 354   |
| MAX   | 2410  | 465    | 260   | 250   | 1200  | 2390  | 1240  | 1130  | 3780  | 5340  | 436   | 420   |
| MIN   | 291   | 4.0    | 80    | 100   | 264   | 202   | 398   | 268   | 207   | 176   | 107   | 268   |
| AC-FT | 34070 | 17230  | 11350 | 10830 | 27540 | 53630 | 40450 | 38080 | 50980 | 31580 | 14390 | 21080 |

CAL YR 1986 TOTAL 156256.0 MEAN 428 MAX 3600 MIN 4.0 AC-FT 309900

WTR YR 1987 TOTAL 177064.0 MEAN 485 MAX 5340 MIN 4.0 AC-FT 351200

e Estimated



06324500 POWDER RIVER AT MOORHEAD, MT--Continued

## WATER-QUALITY RECORDS

LOCATION.--Samples collected at bridge on county road, 1.2 mi upstream from gaging station.

PERIOD OF RECORD.--Water years 1951-53, 1956-57, 1969-72, 1975 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1986 to current year.

WATER TEMPERATURE: February 1951 to September 1953, October 1955 to September 1957, October 1974 to September 1977, March 1978 to September 1981 (seasonal records only).

SUSPENDED-SEDIMENT DISCHARGE: October 1974 to September 1977, March 1978 to current year (seasonal records only).

REMARKS.--Flow regulated by reservoirs and diversions for irrigation upstream from station. Unpublished records of once-daily water temperature are available in files of Montana District office. The suspended-sediment discharge records are published in the report "Water Resources Data for Montana, Water Year 1987."

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,340 microsiemens, Aug. 18, 1987; minimum daily, 949 microsiemens, May 4, 1987.

WATER TEMPERATURE (water years 1951-53, 1955-57, 1975-81): Maximum daily, 33.0°C, July 13, 1981; minimum daily, 0.0°C on many days during winter.

SEDIMENT CONCENTRATION (to 1986 water year): Maximum daily mean, 53,500 mg/L, May 27, 1980; minimum daily mean, 5 mg/L, Sept. 15, 1975.

SEDIMENT LOAD (to 1986 water year): Maximum daily, 2,230,000 tons, May 20, 1978; minimum daily, 0.24 ton, Sept. 15, 1975.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,340 microsiemens, Aug. 18; minimum daily, 949 microsiemens, May 4.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | CLOUD<br>COVER<br>(PER-<br>CENT) | WEATHER<br>(WMO<br>CODE<br>NUMBER) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>AIR<br>(DEG C) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) |
|-------|------|-------------------------------------------------|----------------------------------|------------------------------------|---------------------------------------------------|------------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|----------------------------------------------------------------|
| NOV   |      |                                                 |                                  |                                    |                                                   |                                    |                                      |                                                      |                                     |                                                                |
| 20... | 1040 | 304                                             | 30                               | 1                                  | 2150                                              | 5.5                                | 0.0                                  | 677                                                  | 11.9                                | 92                                                             |
| JAN   |      |                                                 |                                  |                                    |                                                   |                                    |                                      |                                                      |                                     |                                                                |
| 08... | 1105 | 216                                             | 0                                | 0                                  | 2230                                              | -5.0                               | 0.0                                  | 682                                                  | 10.6                                | 82                                                             |
| FEB   |      |                                                 |                                  |                                    |                                                   |                                    |                                      |                                                      |                                     |                                                                |
| 12... | 0955 | 424                                             | 0                                | 0                                  | --                                                | 5.5                                | 0.0                                  | 681                                                  | 12.3                                | --                                                             |
| MAR   |      |                                                 |                                  |                                    |                                                   |                                    |                                      |                                                      |                                     |                                                                |
| 24... | 1205 | 502                                             | 20                               | 1                                  | 2450                                              | 0.0                                | 3.0                                  | 680                                                  | 11.6                                | 98                                                             |
| MAY   |      |                                                 |                                  |                                    |                                                   |                                    |                                      |                                                      |                                     |                                                                |
| 14... | 1310 | 323                                             | 20                               | 1                                  | 1680                                              | 29.5                               | 22.5                                 | 679                                                  | 7.2                                 | 94                                                             |
| JUN   |      |                                                 |                                  |                                    |                                                   |                                    |                                      |                                                      |                                     |                                                                |
| 25... | 1005 | 423                                             | 0                                | 0                                  | 1490                                              | 19.0                               | 18.0                                 | 685                                                  | 8.1                                 | 96                                                             |
| JUL   |      |                                                 |                                  |                                    |                                                   |                                    |                                      |                                                      |                                     |                                                                |
| 21... | 0930 | 363                                             | 90                               | 2                                  | 1970                                              | 27.0                               | 21.0                                 | 677                                                  | 6.9                                 | 88                                                             |
| AUG   |      |                                                 |                                  |                                    |                                                   |                                    |                                      |                                                      |                                     |                                                                |
| 06... | 1125 | 210                                             | 0                                | 0                                  | 2440                                              | 23.0                               | 21.5                                 | 679                                                  | 6.8                                 | 87                                                             |
| SEP   |      |                                                 |                                  |                                    |                                                   |                                    |                                      |                                                      |                                     |                                                                |
| 17... | 0955 | 343                                             | 50                               | 1                                  | 1770                                              | 11.0                               | 12.0                                 | 684                                                  | 8.9                                 | 93                                                             |

| DATE  | PH<br>(STAND-<br>ARD<br>UNITS) | HARD-<br>NESS<br>(MG/L<br>AS<br>CaCO3) | HARD-<br>NESS<br>NONCARB<br>WH WAT<br>TOT FLD<br>MG/L AS<br>CaCO3 | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS Ca) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS Mg) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS Na) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CaCO3) |
|-------|--------------------------------|----------------------------------------|-------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|
| NOV   |                                |                                        |                                                                   |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 20... | 8.2                            | 600                                    | 530                                                               | 140                                          | 60                                                   | 260                                          | 5                                       | 5.2                                                 | 67                                              |
| JAN   |                                |                                        |                                                                   |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 08... | 8.1                            | 560                                    | 360                                                               | 130                                          | 57                                                   | 280                                          | 5                                       | 5.4                                                 | 195                                             |
| FEB   |                                |                                        |                                                                   |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 12... | 8.2                            | 420                                    | 220                                                               | 98                                           | 43                                                   | 240                                          | 5                                       | 5.2                                                 | 205                                             |
| MAR   |                                |                                        |                                                                   |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 24... | 8.3                            | 460                                    | 350                                                               | 79                                           | 63                                                   | 340                                          | 7                                       | 6.0                                                 | 105                                             |
| MAY   |                                |                                        |                                                                   |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 14... | 8.3                            | 380                                    | 180                                                               | 90                                           | 38                                                   | 230                                          | 5                                       | 4.8                                                 | 197                                             |
| JUN   |                                |                                        |                                                                   |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 25... | 8.1                            | 460                                    | 300                                                               | 120                                          | 39                                                   | 160                                          | 3                                       | 5.3                                                 | 163                                             |
| JUL   |                                |                                        |                                                                   |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 21... | 8.0                            | 710                                    | 550                                                               | 190                                          | 57                                                   | 160                                          | 3                                       | 9.4                                                 | 156                                             |
| AUG   |                                |                                        |                                                                   |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 06... | 8.2                            | 580                                    | 360                                                               | 140                                          | 55                                                   | 310                                          | 6                                       | 8.6                                                 | 219                                             |
| SEP   |                                |                                        |                                                                   |                                              |                                                      |                                              |                                         |                                                     |                                                 |
| 17... | 8.2                            | 470                                    | 280                                                               | 110                                          | 47                                                   | 210                                          | 4                                       | 5.8                                                 | 190                                             |

06324500 POWDER RIVER AT MOORHEAD, MT--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) |
|--------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|
| NOV<br>20... | 650                                           | 170                                                 | 0.3                                                | 11                                                | 1300                                                                | 1.8                                                 | 1100                                              | 0.63                                                          | <0.01                                                |
| JAN<br>08... | 600                                           | 200                                                 | 0.5                                                | 11                                                | 1400                                                                | 1.9                                                 | 817                                               | 0.26                                                          | <0.01                                                |
| FEB<br>12... | 600                                           | 150                                                 | 0.5                                                | 8.1                                               | 1300                                                                | 1.7                                                 | 1450                                              | <0.10                                                         | 0.01                                                 |
| MAR<br>24... | 1000                                          | 120                                                 | 0.6                                                | 7.0                                               | 1700                                                                | 2.3                                                 | 2280                                              | 0.41                                                          | 0.01                                                 |
| MAY<br>14... | 510                                           | 150                                                 | 0.6                                                | 9.5                                               | 1200                                                                | 1.6                                                 | 1000                                              | 0.29                                                          | 0.03                                                 |
| JUN<br>25... | 520                                           | 83                                                  | 0.5                                                | 9.7                                               | 1000                                                                | 1.4                                                 | 1180                                              | 0.10                                                          | 0.03                                                 |
| JUL<br>21... | 820                                           | 66                                                  | 0.4                                                | 7.8                                               | 1400                                                                | 1.9                                                 | 1380                                              | 0.68                                                          | 0.01                                                 |
| AUG<br>06... | 810                                           | 140                                                 | 0.6                                                | 8.0                                               | 1600                                                                | 2.2                                                 | 909                                               | <0.10                                                         | 0.01                                                 |
| SEP<br>17... | 550                                           | 120                                                 | 0.5                                                | 6.8                                               | 1200                                                                | 1.6                                                 | 1080                                              | 0.18                                                          | <0.01                                                |

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | OIL AND<br>GREASE,<br>TOTAL<br>RECOV.<br>GRAVI-<br>METRIC<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------------------------|
| JUN<br>12... | 0715 | 2160                                            | 1                                                                   |

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>25... | 1005 | 0.03                                                            | 0.08                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>17... | 0955 | <0.01                                                           | 0.05                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## YELLOWSTONE RIVER BASIN

06324500 POWDER RIVER AT MOORHEAD, MT--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
ONCE-DAILY

| DAY  | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1    | 2430 | 1960 | 2090 | 2290 | 2120 | 2680 | 2860 | 1000 | 2120 | 2280 | 1770 | 1680 |
| 2    | 2080 | 2050 | 2210 | 2330 | 2070 | 2540 | 2690 | 962  | 1850 | 2220 | 1880 | 1590 |
| 3    | 1990 | 2060 | 2230 | 2250 | 2050 | 2240 | 3060 | 997  | 1690 | 2220 | 2680 | 1660 |
| 4    | 2010 | 2090 | 2300 | 2320 | 2020 | 2600 | 3190 | 949  | 1740 | 2250 | 2730 | 1490 |
| 5    | 2080 | 2100 | 2080 | 2310 | 1970 | 2390 | 2880 | 972  | ---  | 2220 | 2690 | 1430 |
| 6    | 2370 | 2010 | 2420 | 2240 | 2020 | 2230 | 2900 | 1050 | ---  | 2750 | 2380 | 1410 |
| 7    | 2310 | 1960 | 2350 | 2190 | 1980 | 2250 | 3080 | 1060 | 1840 | 2540 | 2090 | 1670 |
| 8    | 1920 | 1880 | 2270 | 2160 | 1830 | 2060 | 2730 | 1570 | 1950 | 3190 | 2040 | 1700 |
| 9    | 1930 | 2080 | 2290 | 2200 | 1900 | 1860 | 2560 | 1480 | 1910 | 3010 | 2340 | 1580 |
| 10   | 1950 | 2340 | 2670 | 2250 | 1930 | 1780 | 2420 | 1460 | 2140 | 3110 | 2540 | 1690 |
| 11   | 1920 | 2520 | 2610 | 2350 | 1860 | 1830 | 2380 | 1450 | 1650 | 2570 | 2620 | 2160 |
| 12   | 1900 | 2220 | 1960 | 2360 | 1810 | 1660 | 2290 | 1540 | 1770 | 2140 | 2660 | 1900 |
| 13   | 1990 | 2180 | 2430 | 2260 | 1790 | 1640 | 2390 | 1550 | 1610 | 2220 | 1870 | 1910 |
| 14   | 1990 | 2300 | 2320 | 2210 | 2110 | 1680 | 2420 | 1690 | 1580 | 1530 | 2570 | 1820 |
| 15   | 2000 | 2350 | 2020 | 2210 | 2090 | 1890 | 2440 | 1740 | 1480 | 1520 | 3280 | 1700 |
| 16   | 2030 | 2100 | 2120 | 2310 | 1980 | 2190 | 2500 | 1880 | 1470 | 1760 | 3110 | 1700 |
| 17   | 2030 | 2030 | 2080 | 2400 | 1840 | 2530 | 2520 | 1870 | 1450 | 1680 | 2820 | 1740 |
| 18   | 2030 | 1990 | 2240 | 2520 | 1930 | 2330 | 2540 | 2290 | 1800 | 1620 | 3340 | 1720 |
| 19   | 2010 | 2010 | 2540 | 2660 | 2000 | 1990 | 2540 | 2130 | 1630 | 1730 | 2580 | 1720 |
| 20   | 2010 | 2060 | 2740 | 2590 | 2140 | 2040 | 2420 | 1860 | 1650 | 1720 | 2310 | 1660 |
| 21   | 2000 | 2240 | 2850 | 2440 | 2190 | 2040 | 2210 | 1860 | 1440 | 1900 | 2060 | 1640 |
| 22   | 2010 | 2290 | 3010 | 2400 | 2180 | 2170 | 1840 | 2030 | 1320 | 2010 | 2500 | 1830 |
| 23   | 2000 | 2210 | 2610 | 2380 | 2330 | 2430 | 1640 | 1890 | 1300 | 2490 | 2760 | 1900 |
| 24   | 2030 | 2130 | 2500 | 2370 | 2370 | 2520 | 1570 | 1910 | 1430 | 2890 | 2940 | 1930 |
| 25   | 2170 | 2080 | 2480 | 2320 | 2470 | 2580 | 1730 | 2110 | 1490 | 2800 | 2440 | 1830 |
| 26   | 1910 | 2060 | 2480 | 2290 | 2530 | 2500 | 1880 | 2190 | 1670 | 2520 | 2080 | 1840 |
| 27   | 1830 | 2110 | 2470 | 2410 | 2530 | 2520 | 2000 | 1930 | 1790 | 2090 | 2240 | 1790 |
| 28   | 1780 | 2040 | 2530 | 2390 | 2610 | 2690 | 1840 | 1810 | 1910 | 1800 | 2260 | 1760 |
| 29   | 1790 | 2100 | 2430 | 2290 | ---  | 2870 | 1630 | 2080 | 2020 | 1920 | 1820 | 1790 |
| 30   | 1850 | 2080 | 2430 | 2200 | ---  | 2960 | 1230 | 2010 | 2170 | 2000 | 1960 | 1770 |
| 31   | 1880 | ---  | 2360 | 2180 | ---  | 2950 | ---  | 2060 | ---  | 1760 | 1680 | ---  |
| MEAN | 2007 | 2121 | 2391 | 2325 | 2095 | 2279 | 2346 | 1657 | ---  | 2208 | 2421 | 1733 |

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY

LOCATION.--Lat 44°55'37", long 105°21'10", in NW1/4 SW1/4 SW1/4 sec.13, T.57 N., R.71 W., Campbell County, Hydrologic Unit 10090208, on left bank 3.1 mi upstream from Dry Creek, 5.0 mi south of the Wyoming-Montana State line, and 20 mi north of Weston.

DRAINAGE AREA.--1,235 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

REVISED RECORDS.--WDR WY-77-1: Drainage area. WDR WY-78-1: 1976(M).

GAGE.--Water-stage recorder. Elevation of gage is 3,410 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 8-11, Dec. 1-7, July 3-23. Records fair except those for estimated daily discharges, which are poor. Diversion upstream from station for irrigation of about 80 acres downstream from station. Flow occasionally affected by contributions from mine dewatering.

AVERAGE DISCHARGE.--15 years, 22.1 ft<sup>3</sup>/s, 16,010 acre-ft/yr.

EXTREMES FOR PERIOD OR RECORD.--Maximum discharge, 5,300 ft<sup>3</sup>/s, May 19, 1978, gage height, 11.62 ft; maximum gage height, 11.63 ft, Mar. 20, 1978 (backwater from ice); no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 130 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date     | Time    | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|----------|---------|-----------------------------------|---------------------|
| Oct. 4  | 1700 | 189                               | 4.71                | May 12   | 1230    | 229                               | 4.96                |
| Oct. 24 | 0600 | *389                              | *5.69               | May 17   | 1830    | 274                               | 5.17                |
| Nov. 23 | 1600 | 140                               | 4.42                | May 18   | 1000    | 172                               | 4.63                |
| Mar. 7  | 1200 | 149                               | 4.47                | aJuly 19 | unknown | 134                               | 4.38                |
| Apr. 2  | 0330 | 145                               | 4.45                |          |         |                                   |                     |

a Most probable date.

Minimum daily discharge, 0.87 ft<sup>3</sup>/s, Sept. 29.DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT    | NOV     | DEC   | JAN   | FEB   | MAR   | APR   | MAY    | JUN   | JUL   | AUG   | SEP   |
|-------------|--------|---------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| 1           | 20     | 8.8     | 11    | 3.2   | 3.6   | 3.7   | 34    | 7.1    | 32    | 1.2   | 2.5   | 1.4   |
| 2           | 14     | 8.0     | 9.2   | 3.3   | 4.2   | 4.4   | 99    | 7.2    | 17    | 1.2   | 33    | 1.4   |
| 3           | 17     | 7.6     | 9.0   | 3.3   | 4.1   | 5.0   | 81    | 7.8    | 13    | 3.4   | 15    | 1.3   |
| 4           | 158    | 7.1     | 8.7   | 3.2   | 4.1   | 7.8   | 65    | 7.4    | 11    | 10    | 8.2   | 1.7   |
| 5           | 120    | 6.5     | 8.5   | 3.5   | 3.9   | 20    | 54    | 6.8    | 9.5   | 55    | 4.7   | 3.5   |
| 6           | 71     | 6.2     | 8.4   | 3.7   | 4.8   | 68    | 58    | 4.4    | 9.1   | 21    | 3.1   | 6.6   |
| 7           | 58     | 7.2     | 8.2   | 3.8   | 6.1   | 126   | 49    | 2.9    | 8.4   | 8.0   | 7.0   | 15    |
| 8           | 31     | 6.2     | 7.8   | 3.9   | 7.1   | 102   | 39    | 4.2    | 7.7   | 10    | 11    | 11    |
| 9           | 19     | 5.7     | 7.1   | 4.4   | 6.5   | 71    | 28    | 4.9    | 6.7   | 6.7   | 2.7   | 6.6   |
| 10          | 14     | 5.4     | 6.7   | 4.7   | 7.8   | 48    | 23    | 4.6    | 6.6   | 4.4   | 1.8   | 7.0   |
| 11          | 11     | 5.0     | 6.2   | 4.1   | 7.9   | 32    | 21    | 4.8    | 6.7   | 5.2   | 2.4   | 5.5   |
| 12          | 9.1    | 4.7     | 6.2   | 4.1   | 13    | 28    | 20    | 70     | 7.4   | 7.5   | 3.0   | 3.8   |
| 13          | 8.0    | 4.2     | 6.0   | 4.1   | 25    | 23    | 18    | 18     | 5.9   | 4.8   | 4.1   | 2.2   |
| 14          | 7.3    | 4.5     | 5.6   | 4.2   | 27    | 20    | 17    | 8.7    | 5.1   | 3.3   | 4.2   | 2.0   |
| 15          | 6.1    | 4.8     | 5.3   | 3.8   | 17    | 18    | 16    | 5.6    | 4.6   | 2.5   | 2.9   | 1.7   |
| 16          | 5.1    | 5.1     | 5.1   | 3.5   | 13    | 16    | 15    | 4.9    | 4.2   | 2.2   | 2.5   | 1.3   |
| 17          | 4.6    | 5.6     | 4.9   | 3.1   | 13    | 16    | 14    | 81     | 4.1   | 4.7   | 1.8   | 1.4   |
| 18          | 4.1    | 5.9     | 4.5   | 3.0   | 13    | 17    | 13    | 137    | 3.9   | 15    | 4.4   | 1.7   |
| 19          | 3.8    | 6.2     | 4.0   | 3.0   | 15    | 16    | 12    | 87     | 4.7   | 100   | 3.8   | 1.7   |
| 20          | 3.8    | 7.0     | 3.8   | 3.0   | 13    | 17    | 10    | 64     | 8.4   | 70    | 2.7   | 1.7   |
| 21          | 3.7    | 7.8     | 3.6   | 3.3   | 11    | 18    | 10    | 54     | 11    | 44    | 1.9   | 1.4   |
| 22          | 3.8    | 39      | 3.5   | 3.2   | 9.3   | 18    | 10    | 69     | 5.5   | 29    | 1.8   | 1.1   |
| 23          | 80     | 105     | 3.5   | 2.8   | 6.6   | 16    | 9.7   | 50     | 3.8   | 20    | 1.8   | 1.1   |
| 24          | 246    | 95      | 3.5   | 2.7   | 7.4   | 16    | 9.4   | 48     | 3.0   | 15    | 1.8   | 1.0   |
| 25          | 80     | 83      | 3.5   | 2.5   | 5.8   | 18    | 9.3   | 40     | 2.5   | 11    | 3.8   | .95   |
| 26          | 48     | 76      | 3.5   | 2.5   | 4.8   | 21    | 9.4   | 21     | 2.0   | 7.8   | 6.0   | .95   |
| 27          | 29     | 28      | 3.5   | 2.6   | 4.2   | 24    | 7.1   | 20     | 2.0   | 6.0   | 3.8   | 1.1   |
| 28          | 19     | 23      | 3.5   | 2.8   | 3.5   | 54    | 6.3   | 62     | 1.7   | 5.9   | 3.2   | 1.1   |
| 29          | 14     | 19      | 3.3   | 3.3   | ---   | 32    | 6.6   | 43     | 1.7   | 4.2   | 2.6   | .87   |
| 30          | 12     | 15      | 3.4   | 3.5   | ---   | 27    | 5.6   | 81     | 1.5   | 3.4   | 1.9   | .95   |
| 31          | 9.3    | ---     | 3.5   | 3.5   | ---   | 25    | ---   | 50     | ---   | 2.9   | 1.7   | ---   |
| TOTAL       | 1129.7 | 612.5   | 174.5 | 105.6 | 261.7 | 927.9 | 769.4 | 1076.3 | 210.7 | 485.3 | 151.1 | 89.02 |
| MEAN        | 36.4   | 20.4    | 5.63  | 3.41  | 9.35  | 29.9  | 25.6  | 34.7   | 7.02  | 15.7  | 4.87  | 2.97  |
| MAX         | 246    | 105     | 11    | 4.7   | 27    | 126   | 99    | 137    | 32    | 100   | 33    | 15    |
| MIN         | 3.7    | 4.2     | 3.3   | 2.5   | 3.5   | 3.7   | 5.6   | 2.9    | 1.5   | 1.2   | 1.7   | .87   |
| AC-FT       | 2240   | 1210    | 346   | 209   | 519   | 1840  | 1530  | 2130   | 418   | 963   | 300   | 177   |
| CAL YR 1986 | TOTAL  | 8794.97 |       | MEAN  | 24.1  | MAX   | 651   | MIN    | .12   | AC-FT | 17440 |       |
| WTR YR 1987 | TOTAL  | 5993.72 |       | MEAN  | 16.4  | MAX   | 246   | MIN    | .87   | AC-FT | 11890 |       |

## YELLOWSTONE RIVER BASIN

06324970 LITTLE POWDER RIVER ABOVE DRY CREEK, NEAR WESTON, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975-82, 1985 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>LAB<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) |
|--------------|------|-------------------------------------------------|----------------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|
| OCT<br>01... | 1530 | 18                                              | 887                                                      | 11.5                                 | 220                                    | 49                                           | 23                                                   | 110                                          | 3                                       | 8.8                                                 |
| NOV<br>19... | 1345 | 6.0                                             | 3230                                                     | 1.0                                  | 900                                    | 180                                          | 110                                                  | 440                                          | 7                                       | 16                                                  |
| MAR<br>06... | 1510 | 80                                              | 2690                                                     | 6.0                                  | 830                                    | 150                                          | 110                                                  | 380                                          | 6                                       | 14                                                  |
| JUN<br>30... | 0900 | 1.7                                             | 2450                                                     | 18.0                                 | 630                                    | 120                                          | 81                                                   | 410                                          | 7                                       | 17                                                  |

| DATE         | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) |
|--------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|
| OCT<br>01... | 130                                             | 300                                           | 8.2                                                 | 0.3                                                | 9.1                                               | 616                                                                | 590                                                                 | 0.84                                                | 30                                                | <0.1                                                          |
| NOV<br>19... | 440                                             | 1300                                          | 47                                                  | 0.5                                                | 14                                                | 2530                                                               | 2400                                                                | 3.4                                                 | 41                                                | 0.1                                                           |
| MAR<br>06... | 350                                             | 1200                                          | 30                                                  | 0.5                                                | 8.3                                               | 2190                                                               | 2100                                                                | 3.0                                                 | 473                                               | <0.1                                                          |
| JUN<br>30... | 250                                             | 1200                                          | 18                                                  | 0.5                                                | 6.3                                               | 2000                                                               | 2000                                                                | 2.7                                                 | 9.2                                               | <0.1                                                          |

## Reservoirs in Yellowstone River basin in Wyoming

- 06224500 BULL LAKE.--Lat 43°12'35", long 109°02'30", in E1/2 NW1/4 sec.30, T.3 N., R.2 W., Fremont County, Hydrologic Unit 10080001, Wind River Indian Reservation, at dam on Bull Lake Creek, 2.8 mi upstream from mouth of Bull Lake Creek, and 9.8 mi south of Lenore. DRAINAGE AREA, 210 mi<sup>2</sup>, of which 12 mi<sup>2</sup> is probably noncontributing. PERIOD OF RECORD, April 1938 to current year. Monthend contents only for some periods, published in WSP 1309. Published as Bull Lake Reservoir near Lenore 1938-50. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum).  
REMARKS, reservoir is formed by rockfill dam completed by Bureau of Reclamation July 22, 1938. Capacity, 152,500 acre-ft below elevation 5,805.00 ft, top of spillway gates. Dead storage, 722 acre-ft. Figures given herein represent total contents. Water is used for irrigation near Riverton. COOPERATION, records provided by Bureau of Reclamation.  
EXTREMES FOR PERIOD OF RECORD: Maximum daily contents, 154,200 acre-ft, Aug. 10, 1965, elevation, 5,805.70 ft; minimum daily (since appreciable storage was attained), 5,540 acre-ft, Mar. 15, 1950, elevation, 5,742.56 ft.  
EXTREMES FOR CURRENT YEAR: Maximum daily contents, 149,900 acre-ft, June 17, elevation, 5,804.20 ft; minimum daily, 89,820 acre-ft, Oct. 2, elevation, 5,783.30 ft.
- 06258900 BOYSEN RESERVOIR.--Lat 43°25'00", long 108°10'37", in NW1/4 NW1/4 sec.16, T.5 N., R.6 E., Fremont County, Hydrologic Unit 10080005, at dam on Wind River and 13 mi north of Shoshoni. DRAINAGE AREA, 7,700 mi<sup>2</sup>. PERIOD OF RECORD, October 1951 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum of 1933).  
REMARKS, reservoir is formed by rockfill dam completed by Bureau of Reclamation in October 1951. Capacity, 802,000 acre-ft below elevation 4,725.00 ft, top of spillway gate. Includes 59,880 acre-ft dead storage below elevation 4,657.00 ft, invert of penstock pipe. Figures given herein represent total contents. Water used for irrigation, flood control, and power development. COOPERATION, records provided by Bureau of Reclamation.  
EXTREMES FOR PERIOD OF RECORD: Maximum daily contents, 922,400 acre-ft, July 6, 7, 1967, elevation, 4,730.83 ft; minimum daily (since normal use of water started), 251,800 acre-ft, Mar. 18, 19, 1956, elevation, 4,684.18 ft.  
EXTREMES FOR CURRENT YEAR: Maximum contents, 766,800 acre-ft, Aug. 2, 4, elevation, 4,723.17 ft; minimum daily, 559,200 acre-ft, Apr. 18, elevation, 4,710.96 ft.
- 06260300 ANCHOR RESERVOIR.--Lat 43°39'50", long 108°49'27", in sec.26, T.43 N., R.100 W., Hot Springs County, Hydrologic Unit 10080007, at dam on South Fork Owl Creek, 2.0 mi downstream from Middle Fork, 3.0 mi southeast of Anchor, and 32 mi west of Thermopolis. DRAINAGE AREA, 131 mi<sup>2</sup>. PERIOD OF RECORD, November 1960 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum).  
REMARKS, reservoir is formed by concrete arch dam completed by Bureau of Reclamation in 1960. Capacity, 17,230 acre-ft below elevation 6,441.00 ft, crest of spillway. Includes 68 acre-ft below elevation 6,343.75 ft, invert of river outlet. Figures given herein represent total contents. Water used for irrigation of lands in Owl Creek basin. COOPERATION, records provided by Bureau of Reclamation.  
EXTREMES FOR PERIOD OF RECORD: Maximum daily contents, 9,250 acre-ft, July 4, 1967, elevation, 6,418.52 ft; no storage on many days each year.  
EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 719 acre-ft, Aug. 1, elevation, 6,366.75 ft; no storage on many days.
- 06281500 BUFFALO BILL RESERVOIR.--Lat 44°30'05", long 109°11'00", in NE1/4 sec.12, T.52 N., R.103 W., Park County, Hydrologic Unit 10080013, at dam on Shoshone River, 5.0 mi upstream from Trail Creek, and 6.0 mi southwest of Cody. DRAINAGE AREA, 1,498 mi<sup>2</sup>. PERIOD OF RECORD, May to July 1909, January 1910 to current year. Monthend contents only prior to October 1938, published in WSP 1309. Prior to October 1944, published as Shoshone Reservoir near Cody. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum). Prior to July 8, 1959, nonrecording gage at same datum.  
REMARKS, reservoir is formed by masonry dam completed by Bureau of Reclamation in 1909. Capacity, 424,000 acre-ft between elevations 5,140.00 ft, gate sill, and 5,360.00 ft, crest of spillway. Dead storage negligible. Figures given herein represent total contents. Water used for power development and irrigation of lands east of Cody. COOPERATION, records provided by Bureau of Reclamation.  
EXTREMES FOR PERIOD OF RECORD: Maximum daily contents, 507,000 acre-ft, June 15, 1918, elevation, 5,367.3 ft; minimum daily, 19,000 acre-ft, Jan 23-25, 1941, elevation, 5,225.3 ft.  
EXTREMES FOR CURRENT YEAR: Maximum contents, 383,200 acre-ft, June 12, elevation, 5,353.77 ft; minimum daily, 209,700 acre-ft, Sept. 30, elevation, 5,320.85 ft.



## YELLOWSTONE RIVER BASIN

## Reservoirs in Yellowstone River basin in Wyoming--Continued

| MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987 |                     |                         |                                   |
|----------------------------------------------------------------------------|---------------------|-------------------------|-----------------------------------|
| Date                                                                       | Elevation<br>(feet) | Contents<br>(acre-feet) | Change in contents<br>(acre-feet) |
| 06224500 BULL LAKE                                                         |                     |                         |                                   |
| Sept. 30 . . . . .                                                         | 5,784.89            | 91,360                  | -                                 |
| Oct. 31 . . . . .                                                          | 5,784.68            | 93,440                  | +2,080                            |
| Nov. 30 . . . . .                                                          | 5,785.09            | 94,530                  | +1,090                            |
| Dec. 31 . . . . .                                                          | 5,785.03            | 94,370                  | -160                              |
| CAL YR 1986 . . . . .                                                      | -                   | -                       | +53,940                           |
| Jan. 31 . . . . .                                                          | 5,784.92            | 94,080                  | -290                              |
| Feb. 28 . . . . .                                                          | 5,784.73            | 93,570                  | -510                              |
| Mar. 31 . . . . .                                                          | 5,784.50            | 92,970                  | -600                              |
| Apr. 30 . . . . .                                                          | 5,783.16            | 89,460                  | -3,510                            |
| May 31 . . . . .                                                           | 5,796.67            | 127,000                 | +37,540                           |
| June 30 . . . . .                                                          | 5,802.88            | 145,800                 | +18,800                           |
| July 31 . . . . .                                                          | 5,801.27            | 140,800                 | -5,000                            |
| Aug. 31 . . . . .                                                          | 5,793.93            | 119,000                 | -21,800                           |
| Sept. 30 . . . . .                                                         | 5,784.70            | 93,500                  | -25,500                           |
| WTR YR 1987 . . . . .                                                      | -                   | -                       | +2,140                            |
| 06258900 BOYSEN RESERVOIR                                                  |                     |                         |                                   |
| Sept. 30 . . . . .                                                         | 4,721.29            | 731,800                 | -                                 |
| Oct. 31 . . . . .                                                          | 4,720.78            | 722,400                 | -9,400                            |
| Nov. 30 . . . . .                                                          | 4,719.18            | 693,800                 | -28,600                           |
| Dec. 31 . . . . .                                                          | 4,716.98            | 655,600                 | -38,200                           |
| CAL YR 1986 . . . . .                                                      | -                   | -                       | -43,700                           |
| Jan. 31 . . . . .                                                          | 4,715.04            | 623,200                 | -32,400                           |
| Feb. 28 . . . . .                                                          | 4,713.14            | 592,800                 | -30,400                           |
| Mar. 31 . . . . .                                                          | 4,712.23            | 578,600                 | -14,200                           |
| Apr. 30 . . . . .                                                          | 4,712.03            | 575,500                 | -3,100                            |
| May 31 . . . . .                                                           | 4,717.64            | 666,900                 | +91,400                           |
| June 30 . . . . .                                                          | 4,721.95            | 743,900                 | +77,000                           |
| July 31 . . . . .                                                          | 4,723.12            | 765,800                 | +21,900                           |
| Aug. 31 . . . . .                                                          | 4,722.60            | 756,000                 | -9,800                            |
| Sept. 30 . . . . .                                                         | 4,721.85            | 742,100                 | -13,900                           |
| WTR YR 1987 . . . . .                                                      | -                   | -                       | +10,300                           |
| 06260300 ANCHOR RESERVOIR                                                  |                     |                         |                                   |
| Sept. 30 . . . . .                                                         | DRY                 | 0                       | -                                 |
| Oct. 31 . . . . .                                                          | DRY                 | 0                       | 0                                 |
| Nov. 30 . . . . .                                                          | DRY                 | 0                       | 0                                 |
| Dec. 31 . . . . .                                                          | DRY                 | 0                       | 0                                 |
| CAL YR 1986 . . . . .                                                      | -                   | -                       | 0                                 |
| Jan. 31 . . . . .                                                          | DRY                 | 0                       | 0                                 |
| Feb. 28 . . . . .                                                          | DRY                 | 0                       | 0                                 |
| Mar. 31 . . . . .                                                          | DRY                 | 0                       | 0                                 |
| Apr. 30 . . . . .                                                          | 6,355.00            | 254                     | +254                              |
| May 31 . . . . .                                                           | 6,340.00            | 34                      | -220                              |
| June 30 . . . . .                                                          | 6,340.00            | 34                      | 0                                 |
| July 31 . . . . .                                                          | 6,366.50            | 706                     | +672                              |
| Aug. 31 . . . . .                                                          | 6,340.00            | 34                      | -672                              |
| Sept. 30 . . . . .                                                         | 6,340.00            | 34                      | 0                                 |
| WTR YR 1987 . . . . .                                                      | -                   | -                       | +34                               |
| 06281500 BUFFALO BILL RESERVOIR                                            |                     |                         |                                   |
| Sept. 30 . . . . .                                                         | 5,332.11            | 260,400                 | -                                 |
| Oct. 31 . . . . .                                                          | 5,333.48            | 267,200                 | +6,800                            |
| Nov. 30 . . . . .                                                          | 5,334.52            | 272,500                 | +5,300                            |
| Dec. 31 . . . . .                                                          | 5,334.33            | 271,500                 | -1,000                            |
| CAL YR 1986 . . . . .                                                      | -                   | -                       | -700                              |
| Jan. 31 . . . . .                                                          | 5,334.12            | 270,400                 | -1,100                            |
| Feb. 28 . . . . .                                                          | 5,334.45            | 272,100                 | +1,700                            |
| Mar. 31 . . . . .                                                          | 5,334.96            | 274,700                 | +2,600                            |
| Apr. 30 . . . . .                                                          | 5,337.15            | 286,100                 | +11,400                           |
| May 31 . . . . .                                                           | 5,347.32            | 343,400                 | +57,300                           |
| June 30 . . . . .                                                          | 5,352.04            | 372,300                 | +28,900                           |
| July 31 . . . . .                                                          | 5,344.64            | 327,600                 | -44,700                           |
| Aug. 31 . . . . .                                                          | 5,332.73            | 263,500                 | -64,100                           |
| Sept. 30 . . . . .                                                         | 5,320.85            | 209,700                 | -53,800                           |
| WTR YR 1987 . . . . .                                                      | -                   | -                       | -50,700                           |

06365300 DRY FORK CHEYENNE RIVER NEAR BILL, WY

LOCATION.--Lat 43°13'21", long 105°40'00", in NE1/4 NW1/4 SE1/4, sec. 31, T.38 N., R.73 W., Converse County, Hydrologic Unit 10120102, 800 ft downstream from Cheyenne River Draw and 21 mi west of Bill.

DRAINAGE AREA.--128 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1976 to September 1981, October 1985 to September 1987 (discontinued).

GAGE.--Water-stage recorder. Concrete low-flow control since Sept. 15, 1977. Elevation of gage is 5,060 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 15, 1977, at site 700 ft upstream at datum 4.1 ft higher.

REMARKS.--Estimated daily discharges: Nov. 8-17, Nov. 30 to Mar. 5, Mar. 8-10, 20-31, and Apr. 1-4. Records good except those prior to May, which are poor. Numerous small stockwater reservoirs upstream from station.

AVERAGE DISCHARGE.--6 years (water years 1978-81, 1986-87), 0.92 ft<sup>3</sup>/s, 667 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,010 ft<sup>3</sup>/s, May 18, 1978, gage height, 4.01 ft; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30 ft<sup>3</sup>/s, June 8, gage height, 2.00 ft; maximum recorded gage height, 2.41 ft, Feb. 3 (backwater from ice) but may have been exceeded during period of missing record Jan. 22-30; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB   | MAR   | APR   | MAY  | JUN   | JUL   | AUG | SEP |
|-------------|-------|--------|------|------|-------|-------|-------|------|-------|-------|-----|-----|
| 1           | .03   | .12    | .11  | .06  | .28   | .24   | 1.3   | .18  | .05   | .00   | .00 | .00 |
| 2           | .14   | .12    | .12  | .07  | .30   | .27   | 1.0   | .16  | .03   | .00   | .00 | .11 |
| 3           | .43   | .12    | .10  | .08  | .28   | .60   | 1.5   | .20  | .02   | .00   | .00 | .06 |
| 4           | .45   | .14    | .09  | .08  | .25   | 2.3   | 2.8   | .22  | .02   | .25   | .00 | .02 |
| 5           | .24   | .17    | .11  | .06  | .22   | 5.6   | 6.1   | .19  | .01   | 1.3   | .00 | .01 |
| 6           | .15   | .14    | .14  | .04  | .27   | 8.6   | 5.2   | .16  | .00   | .56   | .00 | .02 |
| 7           | .10   | .30    | .11  | .02  | .36   | 9.1   | 3.8   | .13  | .84   | .07   | .00 | .02 |
| 8           | .08   | .27    | .09  | .02  | .47   | 3.3   | 1.7   | .12  | 2.6   | .02   | .00 | .02 |
| 9           | .06   | .19    | .08  | .02  | .56   | 2.0   | 1.2   | .10  | 14    | .01   | .00 | .01 |
| 10          | .06   | .06    | .06  | .04  | .61   | 1.4   | .87   | .09  | 4.6   | .00   | .00 | .02 |
| 11          | .06   | .10    | .08  | .06  | .66   | 1.1   | .69   | .07  | 1.4   | .01   | .00 | .02 |
| 12          | .08   | .10    | .09  | .12  | .70   | .94   | .70   | .05  | .47   | .01   | .00 | .02 |
| 13          | .10   | .14    | .10  | .18  | .76   | .67   | .70   | .05  | .15   | .01   | .00 | .02 |
| 14          | .10   | .18    | .11  | .14  | .82   | .60   | .64   | .04  | .09   | .00   | .00 | .02 |
| 15          | .09   | .20    | .12  | .08  | .66   | .61   | .58   | .03  | .10   | .00   | .00 | .02 |
| 16          | .09   | .23    | .12  | .04  | .49   | .66   | .49   | .03  | .05   | .00   | .00 | .03 |
| 17          | .09   | .28    | .09  | .06  | .39   | .79   | .39   | .03  | .02   | .00   | .00 | .03 |
| 18          | .09   | .34    | .04  | .08  | .34   | 1.0   | .35   | .05  | .01   | .00   | .00 | .03 |
| 19          | .09   | .29    | .12  | .06  | .29   | .87   | .31   | .05  | .01   | .00   | .00 | .03 |
| 20          | .09   | .23    | .10  | .04  | .26   | 1.3   | .41   | .06  | .01   | .00   | .00 | .02 |
| 21          | .09   | .20    | .10  | .06  | .23   | .93   | .53   | .16  | .00   | .00   | .00 | .02 |
| 22          | .10   | .18    | .12  | .06  | .21   | .74   | .61   | .24  | .00   | .00   | .00 | .02 |
| 23          | .12   | .18    | .10  | .08  | .21   | .81   | .57   | .18  | .00   | .00   | .00 | .02 |
| 24          | .14   | .19    | .09  | .10  | .22   | .73   | .44   | .13  | .00   | .00   | .00 | .02 |
| 25          | .12   | .18    | .09  | .12  | .23   | .65   | .37   | .12  | .00   | .00   | .01 | .02 |
| 26          | .10   | .17    | .10  | .14  | .21   | .72   | .32   | .10  | .00   | .00   | .02 | .03 |
| 27          | .10   | .15    | .10  | .21  | .22   | .79   | .26   | .13  | .00   | .00   | .01 | .02 |
| 28          | .10   | .16    | .11  | .25  | .21   | .75   | .23   | .10  | .00   | .00   | .01 | .02 |
| 29          | .10   | .15    | .11  | .28  | ---   | .72   | .21   | .16  | .00   | .00   | .01 | .03 |
| 30          | .11   | .13    | .11  | .27  | ---   | .68   | .18   | .14  | .00   | .00   | .00 | .03 |
| 31          | .12   | ---    | .08  | .26  | ---   | .75   | ---   | .08  | ---   | .00   | .00 | --- |
| TOTAL       | 3.82  | 5.41   | 3.09 | 3.18 | 10.71 | 50.22 | 34.45 | 3.55 | 24.48 | 2.24  | .06 | .76 |
| MEAN        | .12   | .18    | .10  | .10  | .38   | 1.62  | 1.15  | .11  | .82   | .07   | .00 | .02 |
| MAX         | .45   | .34    | .14  | .28  | .82   | 9.1   | 6.1   | .24  | 14    | 1.3   | .02 | .11 |
| MIN         | .03   | .06    | .04  | .02  | .21   | .24   | .18   | .03  | .00   | .00   | .00 | .00 |
| AC-FT       | 7.6   | 11     | 6.1  | 6.3  | 21    | 100   | 68    | 7.0  | 49    | 4.4   | .1  | 1.5 |
| CAL YR 1986 | TOTAL | 275.39 |      | MEAN | .75   | MAX   | 77    | MIN  | .00   | AC-FT | 546 |     |
| WTR YR 1987 | TOTAL | 141.97 |      | MEAN | .39   | MAX   | 14    | MIN  | .00   | AC-FT | 282 |     |

06365300 DRY FORK CHEYENNE RIVER NEAR BILL, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1977 to September 1981, October 1986 to September 1987 (discontinued).

REMARKS.--No flow observed June 25, July 23.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LITY<br>LAB<br>(MG/L<br>AS<br>CACO3) |
|-------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-----------------------------------------------|
| JAN   |      |                                                 |                                                   |                                |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 05... | 1105 | 0.06                                            | 1670                                              | 7.2                            | 0.0                                  | 820                                    | 190                                          | 84                                                   | 56                                           | 0.9                                     | 12                                                  | 450                                           |
| FEB   |      |                                                 |                                                   |                                |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 11... | 1200 | 0.61                                            | 1760                                              | 7.8                            | 0.5                                  | 840                                    | 190                                          | 88                                                   | 62                                           | 1                                       | 10                                                  | 350                                           |
| MAR   |      |                                                 |                                                   |                                |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 06... | 1300 | 14                                              | 1080                                              | 7.8                            | 2.5                                  | 500                                    | 110                                          | 54                                                   | 33                                           | 0.7                                     | 11                                                  | 170                                           |
| 31... | 0905 | 0.69                                            | 2100                                              | 7.6                            | 0.0                                  | 990                                    | 230                                          | 100                                                  | 70                                           | 1                                       | 11                                                  | 370                                           |
| MAY   |      |                                                 |                                                   |                                |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 04... | 0940 | 0.18                                            | 1300                                              | 7.9                            | 8.5                                  | 820                                    | 170                                          | 97                                                   | 74                                           | 1                                       | 9.0                                                 | 310                                           |
| 18... | 1540 | 0.07                                            | --                                                | --                             | 22.0                                 | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                            |
| 27... | 0945 | 0.17                                            | 1560                                              | 8.0                            | 11.5                                 | 800                                    | 160                                          | 97                                                   | 71                                           | 1                                       | 6.4                                                 | 330                                           |
| JUN   |      |                                                 |                                                   |                                |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 08... | 1500 | 0.87                                            | 1670                                              | 8.1                            | 18.5                                 | 840                                    | 170                                          | 100                                                  | 82                                           | 1                                       | 11                                                  | 220                                           |
| 08... | 2345 | 30                                              | 1410                                              | 7.9                            | 17.5                                 | 770                                    | 180                                          | 77                                                   | 49                                           | 0.8                                     | 14                                                  | 130                                           |
| 25... | 0905 | 0.0                                             | --                                                | --                             | --                                   | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                            |
| JUL   |      |                                                 |                                                   |                                |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 23... | 1335 | 0.0                                             | --                                                | --                             | --                                   | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                            |
| AUG   |      |                                                 |                                                   |                                |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 27... | 1645 | 0.01                                            | 1570                                              | 8.1                            | 19.5                                 | 990                                    | 230                                          | 100                                                  | 79                                           | 1                                       | 17                                                  | 400                                           |

| DATE  | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|-------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|-------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| JAN   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                           |                                                               |                                                               |
| 05... | 450                                           | 11                                                  | 0.6                                                | 20                                                | 1100                                                           | 1.5                                                 | 0.18                                              | <0.1                                                          | 0.03                                        | 80                                        | 0.01                                                          | --                                                            |
| FEB   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                           |                                                               |                                                               |
| 11... | 600                                           | 15                                                  | 0.5                                                | 16                                                | 1200                                                           | 1.6                                                 | 2.0                                               | <0.1                                                          | 0.03                                        | 83                                        | 0.14                                                          | --                                                            |
| MAR   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                           |                                                               |                                                               |
| 06... | 380                                           | 8.6                                                 | 0.3                                                | 12                                                | 710                                                            | 0.97                                                | 27                                                | <0.1                                                          | 0.08                                        | 25                                        | 0.95                                                          | 100                                                           |
| 31... | 750                                           | 16                                                  | 0.5                                                | 15                                                | 1400                                                           | 1.9                                                 | 2.6                                               | 0.1                                                           | 0.02                                        | 66                                        | 0.12                                                          | --                                                            |
| MAY   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                           |                                                               |                                                               |
| 04... | 640                                           | 13                                                  | 0.5                                                | 9.8                                               | 1200                                                           | 1.6                                                 | 0.58                                              | <0.1                                                          | 0.01                                        | 11                                        | 0.01                                                          | --                                                            |
| 18... | --                                            | --                                                  | --                                                 | --                                                | --                                                             | --                                                  | --                                                | --                                                            | --                                          | 9                                         | 0.00                                                          | --                                                            |
| 27... | 580                                           | 7.3                                                 | 0.4                                                | 5.0                                               | 1100                                                           | 1.5                                                 | 0.52                                              | <0.1                                                          | 0.02                                        | 28                                        | 0.01                                                          | --                                                            |
| JUN   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                           |                                                               |                                                               |
| 08... | 800                                           | 11                                                  | 1.5                                                | 8.1                                               | 1300                                                           | 1.8                                                 | 3.1                                               | <0.1                                                          | 0.10                                        | 48                                        | 0.11                                                          | --                                                            |
| 08... | 720                                           | 11                                                  | 0.4                                                | 8.1                                               | 1100                                                           | 1.5                                                 | 92                                                | 0.1                                                           | 0.57                                        | 2620                                      | 212                                                           | --                                                            |
| 25... | --                                            | --                                                  | --                                                 | --                                                | --                                                             | --                                                  | --                                                | --                                                            | --                                          | --                                        | --                                                            | --                                                            |
| JUL   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                           |                                                               |                                                               |
| 23... | --                                            | --                                                  | --                                                 | --                                                | --                                                             | --                                                  | --                                                | --                                                            | --                                          | --                                        | --                                                            | --                                                            |
| AUG   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                           |                                                               |                                                               |
| 27... | 740                                           | 24                                                  | 0.5                                                | 21                                                | 1500                                                           | 2.0                                                 | 0.04                                              | <0.1                                                          | 0.06                                        | 26                                        | 0.00                                                          | --                                                            |

| DATE  | TIME | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.004 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.008 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.016 MM |
|-------|------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| JUN   |      |                                                              |                                                              |                                                              |
| 08... | 2345 | 96                                                           | 96                                                           | 97                                                           |

06365900 CHEYENNE RIVER NEAR DULL CENTER, WY

LOCATION.--Lat 43°25'45", long 105°02'43", in SE1/4 SW1/4 NE1/4 sec.20, T.40 N., R.68 W., Converse County, Hydrologic Unit 10120103, Thunder Basin National Grassland, on right bank at the Fiddleback Ranch, 1.2 mi downstream from confluence of Antelope Creek and Dry Fork Cheyenne River, and 3.0 mi west of Dull Center.

DRAINAGE AREA.--1,527 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1976 to September 1981, October 1985 to September 1987 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 4,310 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 16, 1978, at datum 2.00 ft higher.

REMARKS.--Estimated daily discharges: Oct. 13-30, Dec. 8-12, Dec. 23 to Mar. 2, and Mar. 6 to Apr. 7. Records poor.

AVERAGE DISCHARGE.--7 years (water years 1977-81, 1986-1987), 17.9 ft<sup>3</sup>/s, 12,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,800 ft<sup>3</sup>/s, May 18, 1978, gage height, 14.0 ft, present datum, from rating curve extended above 1,700 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow for several days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,870 ft<sup>3</sup>/s, June 8, gage height, 6.37 ft; minimum daily, 0.02 ft<sup>3</sup>/s, Sept. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT    | NOV     | DEC  | JAN   | FEB    | MAR   | APR   | MAY    | JUN     | JUL   | AUG   | SEP  |
|-------------|--------|---------|------|-------|--------|-------|-------|--------|---------|-------|-------|------|
| 1           | .21    | .76     | .12  | .25   | .98    | 4.7   | 15    | 8.5    | 13      | .70   | .19   | .03  |
| 2           | 272    | .73     | .12  | .25   | 1.3    | 5.9   | 16    | 17     | 13      | .55   | .10   | .02  |
| 3           | 214    | .98     | .15  | .25   | 1.7    | 8.5   | 20    | 27     | 10      | 6.2   | .08   | .03  |
| 4           | 37     | .83     | .17  | .26   | 1.5    | 27    | 39    | 25     | 9.7     | 4.1   | .09   | .08  |
| 5           | 16     | .92     | .14  | .26   | 1.2    | 95    | 83    | 16     | 7.8     | 1.4   | .10   | .06  |
| 6           | 10     | 1.6     | .14  | .26   | 1.3    | 113   | 72    | 12     | 6.7     | .54   | .09   | .04  |
| 7           | 7.1    | 2.8     | .14  | .24   | 1.6    | 123   | 53    | 10     | 20      | 5.3   | .11   | .07  |
| 8           | 6.5    | 2.2     | .14  | .23   | 1.9    | 65    | 37    | 8.3    | 910     | 7.3   | .12   | .06  |
| 9           | 5.8    | .69     | .10  | .24   | 2.2    | 36    | 32    | 7.1    | 120     | 1.1   | .09   | .06  |
| 10          | 4.4    | .42     | .06  | .27   | 2.3    | 26    | 30    | 5.9    | 62      | .69   | .09   | .05  |
| 11          | 3.6    | .32     | .10  | .57   | 2.9    | 19    | 28    | 4.4    | 79      | .47   | .09   | .05  |
| 12          | 3.0    | .28     | .12  | .96   | 3.6    | 16    | 28    | 3.9    | 53      | .39   | .10   | .04  |
| 13          | 2.2    | .29     | .14  | 1.3   | 4.8    | 14    | 25    | 3.3    | 39      | .35   | .10   | .05  |
| 14          | 1.7    | .40     | .15  | .82   | 6.1    | 14    | 22    | 2.7    | 30      | .30   | .09   | .05  |
| 15          | 1.3    | .51     | .15  | .45   | 8.3    | 16    | 19    | 2.2    | 23      | .33   | .09   | .04  |
| 16          | 1.1    | 1.3     | .15  | .31   | 7.6    | 17    | 18    | 110    | 17      | .12   | .10   | .04  |
| 17          | .91    | 1.8     | .16  | .26   | 6.9    | 19    | 17    | 189    | 15      | .11   | .09   | .07  |
| 18          | .83    | 1.2     | .16  | .24   | 6.3    | 18    | 15    | 37     | 14      | .12   | .10   | .07  |
| 19          | .77    | 1.9     | .14  | .23   | 5.9    | 21    | 13    | 17     | 16      | .10   | .10   | .07  |
| 20          | .72    | 1.6     | .17  | .23   | 5.6    | 16    | 14    | 58     | 14      | .09   | .11   | .06  |
| 21          | .66    | 3.1     | .21  | .24   | 5.4    | 13    | 15    | 82     | 9.9     | .09   | .09   | .07  |
| 22          | .64    | 1.5     | .24  | .26   | 5.1    | 14    | 16    | 37     | 6.8     | .09   | .09   | .07  |
| 23          | .72    | 1.3     | .32  | .27   | 4.7    | 13    | 16    | 41     | 5.1     | .09   | .10   | .06  |
| 24          | .80    | .96     | .30  | .27   | 4.3    | 12    | 16    | 115    | 3.5     | .10   | .23   | .06  |
| 25          | .86    | .49     | .29  | .30   | 4.0    | 13    | 15    | 304    | 2.4     | .10   | .18   | .06  |
| 26          | .86    | .25     | .28  | .36   | 3.7    | 14    | 13    | 63     | 2.0     | .12   | .11   | .06  |
| 27          | .80    | .19     | .27  | .47   | 4.0    | 13    | 12    | 49     | 1.6     | 4.2   | .10   | .06  |
| 28          | .77    | .18     | .27  | .67   | 4.2    | 13    | 12    | 17     | 1.2     | 5.3   | .07   | .06  |
| 29          | .72    | .17     | .27  | .58   | ---    | 12    | 11    | 12     | 1.0     | .27   | .05   | .07  |
| 30          | .68    | .15     | .26  | .60   | ---    | 12    | 9.9   | 11     | .87     | 2.7   | .04   | .07  |
| 31          | .68    | ---     | .25  | .73   | ---    | 18    | ---   | 10     | ---     | .45   | .04   | ---  |
| TOTAL       | 597.33 | 29.82   | 5.68 | 12.63 | 109.38 | 821.1 | 731.9 | 1305.3 | 1506.57 | 43.77 | 3.13  | 1.68 |
| MEAN        | 19.3   | .99     | .18  | .41   | 3.91   | 26.5  | 24.4  | 42.1   | 50.2    | 1.41  | .10   | .06  |
| MAX         | 272    | 3.1     | .32  | 1.3   | 8.3    | 123   | 83    | 304    | 910     | 7.3   | .23   | .08  |
| MIN         | .21    | .15     | .06  | .23   | .98    | 4.7   | 9.9   | 2.2    | .87     | .09   | .04   | .02  |
| AC-FT       | 1180   | 59      | 11   | 25    | 217    | 1630  | 1450  | 2590   | 2990    | 87    | 6.2   | 3.3  |
| CAL YR 1986 | TOTAL  | 4554.24 |      | MEAN  | 12.5   | MAX   | 430   | MIN    | .06     | AC-FT | 9030  |      |
| WTR YR 1987 | TOTAL  | 5168.29 |      | MEAN  | 14.2   | MAX   | 910   | MIN    | .02     | AC-FT | 10250 |      |

## CHEYENNE RIVER BASIN

06365900 CHEYENNE RIVER NEAR DULL CENTER, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976-81, October 1986 to September 1987 (discontinued).

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LITY<br>LAB<br>(MG/L<br>AS<br>CACO3) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-----------------------------------------------|
| JAN<br>05... | 1410 | 0.26                                            | 3400                                              | 7.9                            | 0.5                                  | 1200                                   | 280                                          | 130                                                  | 330                                          | 4                                       | 13                                                  | 320                                           |
| FEB<br>12... | 1300 | 3.1                                             | 2630                                              | 8.0                            | 2.5                                  | 950                                    | 230                                          | 92                                                   | 230                                          | 3                                       | 11                                                  | 240                                           |
| MAR<br>05... | 1530 | 121                                             | 950                                               | 8.0                            | 3.5                                  | 300                                    | 72                                           | 30                                                   | 81                                           | 2                                       | 6.6                                                 | 130                                           |
| APR<br>03... | 1415 | 20                                              | 2060                                              | 8.3                            | 16.0                                 | 780                                    | 190                                          | 75                                                   | 190                                          | 3                                       | 9.2                                                 | 240                                           |
| MAY<br>04... | 1240 | 31                                              | 1290                                              | 8.2                            | 15.0                                 | 470                                    | 110                                          | 47                                                   | 120                                          | 2                                       | 8.6                                                 | 140                                           |
| 18...        | 1145 | 37                                              | 930                                               | 7.9                            | 13.0                                 | 320                                    | 78                                           | 31                                                   | 67                                           | 2                                       | 8.4                                                 | 86                                            |
| 27...        | 1230 | 45                                              | 840                                               | 8.0                            | 17.0                                 | 290                                    | 71                                           | 27                                                   | 68                                           | 2                                       | 5.9                                                 | 88                                            |
| JUN<br>25... | 1300 | 2.6                                             | 2800                                              | 8.2                            | 28.0                                 | 900                                    | 210                                          | 91                                                   | 250                                          | 4                                       | 14                                                  | 260                                           |
| JUL<br>23... | 1045 | 0.11                                            | 3380                                              | 8.1                            | 26.5                                 | 1300                                   | 320                                          | 130                                                  | 370                                          | 5                                       | 17                                                  | 270                                           |
| AUG<br>27... | 1200 | 0.13                                            | 2720                                              | 8.2                            | 23.0                                 | 990                                    | 200                                          | 120                                                  | 350                                          | 5                                       | 17                                                  | 290                                           |

| DATE         | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|--------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|-------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| JAN<br>05... | 1600                                          | 28                                                  | 0.6                                                | 14                                                | 2600                                                                | 3.5                                                 | 1.8                                               | 0.1                                                           | 0.02                                        | 52                                        | 0.04                                                          | --                                                            |
| FEB<br>12... | 1100                                          | 20                                                  | 0.5                                                | 14                                                | 1800                                                                | 2.5                                                 | 15                                                | <0.1                                                          | 0.04                                        | 128                                       | 1.1                                                           | --                                                            |
| MAR<br>05... | 360                                           | 7.0                                                 | 0.3                                                | 8.3                                               | 640                                                                 | 0.87                                                | 210                                               | 0.2                                                           | 0.70                                        | 2420                                      | 791                                                           | --                                                            |
| APR<br>03... | 880                                           | 19                                                  | 0.4                                                | 13                                                | 1500                                                                | 2.1                                                 | 82                                                | <0.1                                                          | 0.07                                        | 255                                       | 14                                                            | 87                                                            |
| MAY<br>04... | 550                                           | 11                                                  | 0.3                                                | 8.2                                               | 940                                                                 | 1.3                                                 | 79                                                | 0.2                                                           | 0.34                                        | 780                                       | 65                                                            | --                                                            |
| 18...        | 370                                           | 7.9                                                 | 0.3                                                | 7.2                                               | 620                                                                 | 0.85                                                | 62                                                | 0.3                                                           | 0.63                                        | 1980                                      | 198                                                           | --                                                            |
| 27...        | 320                                           | 6.8                                                 | 0.3                                                | 7.6                                               | 560                                                                 | 0.76                                                | 68                                                | 0.2                                                           | 0.77                                        | 2590                                      | 315                                                           | --                                                            |
| JUN<br>25... | 1200                                          | 23                                                  | 0.4                                                | 13                                                | 2000                                                                | 2.7                                                 | 14                                                | <0.1                                                          | 0.06                                        | 112                                       | 0.79                                                          | --                                                            |
| JUL<br>23... | 1700                                          | 26                                                  | 0.4                                                | 14                                                | 2700                                                                | 3.7                                                 | 0.81                                              | <0.1                                                          | 0.02                                        | 56                                        | 0.02                                                          | --                                                            |
| AUG<br>27... | 1700                                          | 29                                                  | 0.5                                                | 14                                                | 2600                                                                | 3.5                                                 | 0.91                                              | <0.1                                                          | 0.11                                        | 64                                        | 0.02                                                          | --                                                            |

| DATE | TIME | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.004 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.008 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.016 MM |
|------|------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
|------|------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|

|              |      |    |    |    |
|--------------|------|----|----|----|
| MAR<br>05... | 1530 | 64 | 73 | 83 |
| 06...        | 1810 | 67 | 75 | 82 |
| MAY<br>04... | 1240 | 78 | 84 | 90 |
| 18...        | 1145 | 93 | 95 | 96 |

| DATE         | TIME | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.125 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.250 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.500 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>1.00 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>2.00 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>4.00 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>8.00 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>16.0 MM |
|--------------|------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
| MAY<br>27... | 1230 | 1                                                           | 4                                                           | 27                                                          | 67                                                          | 89                                                          | 95                                                          | 98                                                          | 100                                                         |

## 06376300 BLACK THUNDER CREEK NEAR HAMPSHIRE, WY

LOCATION.--Lat 43°34'54", long 104°43'11", in SW1/4 SW1/4 SW1/4 sec.30, T.42 N., R.65 W., Weston County, Hydrologic Unit 10120103, on right bank 20 ft downstream from bridge on county road, 1.3 mi west of Hampshire, and 4.0 mi upstream from mouth.

DRAINAGE AREA.--535 mi<sup>2</sup>, approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,080 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 24 to Nov. 30, Jan. 12-18, 25-29, 31, Feb. 1, 2, 9-28, Mar. 1-5, 28-30, Apr. 17-30, May 1-6, 8-16, June 18-20, 27-30, July 1, 2, 8, 9, 14-19, 23-27, and Aug. 2 to Sept. 30. Records fair except those for estimated daily discharges and those less than 1.0 ft<sup>3</sup>/s, which are poor. There are many small stock ponds upstream from station. No diversion upstream from station.

AVERAGE DISCHARGE.--15 years, 7.80 ft<sup>3</sup>/s, 5,650 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,050 ft<sup>3</sup>/s, May 18, 1978, gage height, 14.13 ft, from floodmark, from rating curve extended above 630 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|--------|------|--------------------------------|------------------|
| Oct. 3 | 1930 | 1,200                          | 11.30            | May 27 | 1330 | 636                            | 9.21             |
| Mar. 6 | 1800 | *1,210                         | *11.50           | May 29 | 1700 | 377                            | 6.88             |
| May 21 | 1430 | 262                            | 5.78             |        |      |                                |                  |

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT     | NOV     | DEC | JAN  | FEB   | MAR     | APR    | MAY    | JUN    | JUL   | AUG   | SEP |
|-------------|---------|---------|-----|------|-------|---------|--------|--------|--------|-------|-------|-----|
| 1           | 2.1     | .14     | .00 | .00  | .00   | .00     | 63     | .02    | 14     | .02   | .46   | .00 |
| 2           | 96      | .09     | .00 | .00  | .00   | .00     | 66     | .02    | 6.9    | .00   | .25   | .00 |
| 3           | 902     | .11     | .00 | .00  | .00   | 3.0     | 23     | .02    | 4.3    | 16    | .12   | .00 |
| 4           | 410     | .14     | .00 | .00  | .00   | 55      | 40     | .02    | 3.8    | 18    | .01   | .00 |
| 5           | 39      | .16     | .00 | .00  | .00   | 330     | 57     | .02    | 3.4    | 4.1   | .00   | .00 |
| 6           | 14      | .16     | .00 | .00  | .00   | 604     | 42     | .16    | 1.4    | 1.7   | .00   | .00 |
| 7           | 7.1     | .14     | .00 | .00  | .00   | 307     | 18     | .55    | 1.1    | .79   | .00   | .00 |
| 8           | 4.7     | .12     | .00 | .00  | .00   | 88      | 8.4    | .35    | 1.4    | .41   | .00   | .00 |
| 9           | 3.4     | .08     | .00 | .00  | .25   | 50      | 4.5    | .20    | 50     | .28   | .00   | .00 |
| 10          | 2.5     | .06     | .00 | .00  | 1.9   | 20      | 3.1    | .07    | 15     | 2.6   | .00   | .00 |
| 11          | 2.1     | .14     | .00 | .00  | 5.5   | 17      | 2.2    | .00    | 30     | 1.2   | .00   | .00 |
| 12          | 1.7     | .16     | .00 | .13  | 6.5   | 11      | 1.6    | .00    | 25     | .68   | .00   | .00 |
| 13          | 1.4     | .17     | .00 | .22  | 3.5   | 8.5     | 1.3    | .00    | 7.6    | .44   | .00   | .00 |
| 14          | 1.3     | .17     | .00 | .07  | 1.3   | 8.7     | 1.0    | .00    | 3.6    | .26   | .00   | .00 |
| 15          | 1.0     | .18     | .00 | .00  | .64   | 5.8     | .96    | .00    | 2.1    | .16   | .00   | .00 |
| 16          | .86     | .20     | .00 | .00  | .15   | 4.3     | .75    | .00    | 1.3    | .08   | .00   | .00 |
| 17          | .74     | .22     | .00 | .00  | .00   | 4.1     | .50    | 31     | .80    | .01   | .00   | .00 |
| 18          | .60     | .20     | .00 | .00  | .00   | 3.7     | .36    | 44     | .45    | .00   | .00   | .00 |
| 19          | .47     | .09     | .00 | .00  | .00   | 2.9     | .26    | 11     | .36    | .00   | .00   | .00 |
| 20          | .40     | .00     | .00 | .00  | .00   | 2.4     | .16    | 8.3    | .29    | 5.0   | .00   | .00 |
| 21          | .39     | .05     | .00 | .00  | .00   | 12      | .03    | 91     | 37     | 2.4   | .00   | .00 |
| 22          | .38     | .11     | .00 | .00  | .00   | 11      | .02    | 41     | 9.2    | .92   | .00   | .00 |
| 23          | .35     | .06     | .00 | .00  | .00   | 9.3     | .02    | 13     | 4.4    | .43   | .00   | .00 |
| 24          | .23     | .16     | .00 | .00  | .00   | 4.3     | .02    | 7.4    | 2.2    | .26   | .00   | .00 |
| 25          | .22     | .13     | .00 | .05  | .00   | 2.8     | .02    | 6.7    | 1.2    | .16   | .00   | .00 |
| 26          | .21     | .09     | .00 | .08  | .00   | 3.1     | .02    | 6.4    | .74    | .08   | .00   | .00 |
| 27          | .19     | .07     | .00 | .05  | .00   | 2.7     | .02    | 236    | .40    | .02   | .00   | .00 |
| 28          | .16     | .11     | .00 | .02  | .00   | 1.6     | .02    | 58     | .26    | 11    | .00   | .00 |
| 29          | .16     | .17     | .00 | .01  | ---   | 1.5     | .02    | 160    | .16    | 12    | .00   | .00 |
| 30          | .16     | .07     | .00 | .00  | ---   | 3.0     | .02    | 93     | .08    | 2.9   | .00   | .00 |
| 31          | .16     | ---     | .00 | .00  | ---   | 3.9     | ---    | 23     | ---    | 1.5   | .00   | --- |
| TOTAL       | 1493.98 | 3.75    | .00 | .63  | 19.74 | 1580.60 | 334.30 | 831.23 | 228.44 | 83.40 | .84   | .00 |
| MEAN        | 48.2    | .12     | .00 | .02  | .70   | 51.0    | 11.1   | 26.8   | 7.61   | 2.69  | .03   | .00 |
| MAX         | 902     | .22     | .00 | .22  | 6.5   | 604     | 66     | 236    | 50     | 18    | .46   | .00 |
| MIN         | .16     | .00     | .00 | .00  | .00   | .00     | .02    | .00    | .08    | .00   | .00   | .00 |
| AC-FT       | 2960    | 7.4     | .00 | 1.2  | 39    | 3140    | 663    | 1650   | 453    | 165   | 1.7   | .00 |
| CAL YR 1986 | TOTAL   | 6173.01 |     | MEAN | 16.9  | MAX     | 902    | MIN    | .00    | AC-FT | 12240 |     |
| WTR YR 1987 | TOTAL   | 4576.91 |     | MEAN | 12.5  | MAX     | 902    | MIN    | .00    | AC-FT | 9080  |     |



## CHEYENNE RIVER BASIN

06376300 BLACK THUNDER CREEK NEAR HAMPSHIRE, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1979 to September 1981, October 1986 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L) | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.004 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.008 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.016 MM |
|--------------|------|--------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| OCT<br>03... | 1230 | 4420                                       | --                                                           | --                                                           | --                                                           |
| MAR<br>05... | 1100 | --                                         | 62                                                           | 73                                                           | 82                                                           |
| MAY<br>27... | 1730 | 8770                                       | 90                                                           | 94                                                           | 96                                                           |
| 27...        | 1900 | 8200                                       | --                                                           | --                                                           | --                                                           |

## 06386400 CHEYENNE RIVER AT RIVERVIEW, WY

LOCATION.--Lat 43°25'41", long 104°11'45", in NW1/4 NE1/4 SW1/4 sec.21, T.40 N., R.61 W., Niobrara County, Hydrologic Unit 10120106, at bridge on U.S. Highway 85, 0.5 mi north of Riverview, 0.9 mi upstream from Bobcat Creek, 4.7 mi upstream from former gaging station, and 30 mi south of Newcastle.

DRAINAGE AREA.--5,160 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--Water years 1951-54, 1969-70, 1972 to current year. Published as South Fork Cheyenne River near Spencer prior to October 1951, as Cheyenne River near Spencer 1952-76, and as Cheyenne River near Riverview 1977-79.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>25... | 1230 | 35                                              | 23.0                                 | <0.01                                                           | 0.13                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>22... | 0915 | 2.6                                             | 23.0                                 | <0.01                                                           | 0.60                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## 06394000 BEAVER CREEK NEAR NEWCASTLE, WY

LOCATION.--Lat 43°32'07", long 104°07'02", in NW1/4 sec.18, T.41 N., R.60 W., Weston County, Hydrologic Unit 10120107, at highway bridge, 2.2 mi downstream from Sheep Creek, and 23 mi south of Newcastle.

DRAINAGE AREA.--1,320 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--February to September 1943, October 1944 to current year.

REVISED RECORDS.--WSP 1209: 1943, 1946, 1948-49.

GAGE.--Water-stage recorder. Elevation of gage is 3,660 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 1, 1945, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Nov. 7 to Apr. 1. Records fair except those November to March, which are poor. There are many small reservoirs upstream from station used for storage of stock and irrigation water, total capacity, about 11,000 acre-ft. Diversions for irrigation of about 4,900 acres upstream from station.

AVERAGE DISCHARGE.--43 years (water years 1945-87), 31.1 ft<sup>3</sup>/s, 22,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft<sup>3</sup>/s, June 16, 1962, gage height, 19.98 ft, from rating curve extended above 4,000 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Oct. 5 | 0930 | 742                               | 8.13                | Mar. 7 | 1100 | a*1,550                           | b*12.78             |

a about.

b from floodmark, backwater from ice.

Minimum daily discharge, 0.42 ft<sup>3</sup>/s, Sept. 27, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV      | DEC  | JAN  | FEB  | MAR   | APR    | MAY   | JUN   | JUL   | AUG    | SEP    |
|-------------|-------|----------|------|------|------|-------|--------|-------|-------|-------|--------|--------|
| 1           | 32    | 24       | 21   | 15   | 17   | 24    | 42     | 5.9   | 14    | 2.6   | .70    | 3.3    |
| 2           | 116   | 24       | 20   | 13   | 17   | 26    | 53     | 5.5   | 12    | 2.0   | .60    | 3.5    |
| 3           | 399   | 24       | 17   | 14   | 16   | 27    | 185    | 8.0   | 8.7   | 1.4   | .67    | 3.2    |
| 4           | 418   | 24       | 16   | 14   | 16   | 29    | 112    | 12    | 6.1   | 1.1   | .75    | 2.7    |
| 5           | 663   | 24       | 14   | 15   | 16   | 143   | 82     | 75    | 6.8   | 1.2   | .91    | 2.1    |
| 6           | 252   | 24       | 14   | 16   | 16   | 1010  | 72     | 48    | 5.9   | 1.0   | .98    | 2.9    |
| 7           | 110   | 23       | 15   | 18   | 16   | 1440  | 63     | 18    | 4.4   | 1.4   | 1.1    | 8.2    |
| 8           | 69    | 22       | 15   | 18   | 16   | 1180  | 54     | 8.5   | 4.1   | 2.9   | 1.4    | 8.6    |
| 9           | 55    | 18       | 14   | 16   | 17   | 668   | 41     | 6.3   | 4.4   | 1.3   | 1.5    | 8.5    |
| 10          | 49    | 14       | 14   | 14   | 19   | 340   | 37     | 11    | 43    | 1.0   | 1.5    | 7.4    |
| 11          | 39    | 14       | 13   | 14   | 24   | 180   | 35     | 9.2   | 15    | .98   | 1.9    | 7.1    |
| 12          | 36    | 15       | 12   | 15   | 50   | 103   | 34     | 6.4   | 11    | .91   | 4.9    | 7.4    |
| 13          | 33    | 15       | 12   | 16   | 83   | 72    | 30     | 5.8   | 9.1   | .91   | 4.3    | 7.4    |
| 14          | 32    | 17       | 12   | 17   | 125  | 58    | 26     | 4.8   | 8.5   | .79   | 4.4    | 7.6    |
| 15          | 31    | 18       | 13   | 18   | 170  | 50    | 21     | 4.2   | 7.1   | .73   | 4.2    | 7.5    |
| 16          | 29    | 19       | 13   | 15   | 230  | 45    | 19     | 4.3   | 6.7   | .65   | 4.6    | 6.7    |
| 17          | 28    | 20       | 13   | 12   | 180  | 41    | 15     | 6.0   | 5.8   | .64   | 5.1    | 3.0    |
| 18          | 27    | 21       | 13   | 13   | 140  | 39    | 12     | 6.0   | 4.1   | .65   | 4.5    | 2.5    |
| 19          | 27    | 22       | 13   | 14   | 102  | 38    | 12     | 5.4   | 5.5   | .65   | 6.2    | 1.2    |
| 20          | 27    | 22       | 13   | 14   | 77   | 36    | 12     | 5.2   | 3.0   | .61   | 6.1    | .80    |
| 21          | 27    | 21       | 14   | 13   | 53   | 34    | 11     | 8.7   | 2.7   | .63   | 4.5    | .73    |
| 22          | 28    | 22       | 14   | 13   | 44   | 33    | 10     | 11    | 2.2   | .54   | 4.2    | .61    |
| 23          | 27    | 22       | 14   | 12   | 40   | 32    | 9.7    | 17    | 2.0   | .51   | 3.9    | .73    |
| 24          | 27    | 22       | 14   | 13   | 38   | 32    | 9.1    | 61    | 2.3   | 1.9   | 3.3    | .85    |
| 25          | 27    | 21       | 14   | 14   | 35   | 34    | 8.8    | 50    | 2.0   | 1.7   | 4.9    | .84    |
| 26          | 27    | 21       | 14   | 14   | 31   | 36    | 8.6    | 29    | 1.5   | 1.3   | 4.5    | .56    |
| 27          | 26    | 20       | 13   | 15   | 29   | 38    | 8.6    | 22    | 1.5   | 1.1   | 4.4    | .42    |
| 28          | 26    | 22       | 14   | 15   | 26   | 37    | 7.7    | 18    | 1.6   | .68   | 4.6    | .46    |
| 29          | 25    | 23       | 14   | 16   | ---  | 35    | 6.7    | 26    | 1.5   | .99   | 4.4    | .44    |
| 30          | 25    | 22       | 15   | 16   | ---  | 34    | 6.4    | 25    | 1.7   | 1.1   | 3.8    | .42    |
| 31          | 25    | ---      | 15   | 17   | ---  | 38    | ---    | 16    | ---   | .69   | 3.5    | ---    |
| TOTAL       | 2762  | 620      | 442  | 459  | 1643 | 5932  | 1043.6 | 539.2 | 204.2 | 34.56 | 102.31 | 107.66 |
| MEAN        | 89.1  | 20.7     | 14.3 | 14.8 | 58.7 | 191   | 34.8   | 17.4  | 6.81  | 1.11  | 3.30   | 3.59   |
| MAX         | 663   | 24       | 21   | 18   | 230  | 1440  | 185    | 75    | 43    | 2.9   | 6.2    | 8.6    |
| MIN         | 25    | 14       | 12   | 12   | 16   | 24    | 6.4    | 4.2   | 1.5   | .51   | .60    | .42    |
| AC-FT       | 5480  | 1230     | 877  | 910  | 3260 | 11770 | 2070   | 1070  | 405   | 69    | 203    | 214    |
| CAL YR 1986 | TOTAL | 18383.1  |      | MEAN | 50.4 | MAX   | 715    | MIN   | 2.0   | AC-FT | 36460  |        |
| WTR YR 1987 | TOTAL | 13889.53 |      | MEAN | 38.1 | MAX   | 1440   | MIN   | .42   | AC-FT | 27550  |        |

## CHEYENNE RIVER BASIN

06395000 CHEYENNE RIVER AT EDMONT, SD

LOCATION.--Lat 43°18'20", long 103°49'14", in SW1/4 SE1/4 SE1/4 sec.36, T.8 S., R.2 E., Fall River County, Hydrologic Unit 10120106, on right bank at downstream side of bridge on U.S. Highway 18, at Edgemont, 300 ft downstream from Burlington Northern Railroad bridge, and 600 ft upstream from Cottonwood Creek.

DRAINAGE AREA.--7,143 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1903 to November 1906 (no winter records), April 1928 to February 1933, October 1946 to current year.

REVISED RECORDS.--WSP 1086: Drainage area. WSP 1116: 1947. WDR SD-78-1 1977.

GAGE.--Water-stage recorder. Datum of gage is 3,414.56 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 1, 1906, nonrecording gage 20 ft upstream at datum 0.7 ft lower. Apr. 11, 1928, to Feb. 28, 1933, Oct. 4, 1946, to Oct. 23, 1947, and Jan. 11, 1961, to Apr. 24, 1963, nonrecording gage, and Oct. 24, 1947, to Jan. 10, 1961, and Apr. 25, 1963, to Sept. 30, 1972, water-stage recorder all at present site at datum 2.00 ft higher.

REMARKS.--Records good except for periods of estimated record, which are poor. Estimated daily discharges during water year: Nov. 10 to Mar. 5 and June 25 to July 7. Many small reservoirs upstream from station used for stock and irrigation water, total capacity, about 45,000 acre-ft. U.S. Bureau of Reclamation satellite data-collection platform at station.

AVERAGE DISCHARGE.--45 years, 96.4 ft<sup>3</sup>/s, 69,840 acre-ft/yr; median of yearly mean discharges, 80 ft<sup>3</sup>/s, 58,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft<sup>3</sup>/s, May 20, 1978, gage height, 13.65 ft, present datum; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 12, 1920, reached a stage of 13.0 ft and May 1, 1922, 14.0 ft, present datum, from floodmarks at railroad bridge.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft<sup>3</sup>/s and maximum (\*):

| Date                                                        | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|-------------------------------------------------------------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| Mar. 8                                                      | 0700 | *2,550                         | *6.24            | No other peak greater than base discharge. |      |                                |                  |
| Minimum daily discharge, 0.68 ft <sup>3</sup> /s, Sept. 29. |      |                                |                  |                                            |      |                                |                  |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV      | DEC  | JAN  | FEB  | MAR   | APR  | MAY  | JUN  | JUL   | AUG   | SEP    |
|-------------|-------|----------|------|------|------|-------|------|------|------|-------|-------|--------|
| 1           | 99    | 44       | 28   | 30   | 26   | 46    | 119  | 38   | 195  | 40    | 2.9   | 4.1    |
| 2           | 109   | 43       | 23   | 22   | 22   | 55    | 124  | 30   | 133  | 45    | 2.2   | 3.6    |
| 3           | 435   | 42       | 23   | 26   | 22   | 56    | 137  | 33   | 111  | 40    | 5.0   | 3.0    |
| 4           | 667   | 40       | 20   | 27   | 21   | 65    | 255  | 66   | 89   | 55    | 4.2   | 3.1    |
| 5           | 1270  | 41       | 20   | 26   | 19   | 90    | 203  | 166  | 77   | 70    | 2.9   | 3.2    |
| 6           | 1030  | 39       | 24   | 27   | 23   | 332   | 171  | 128  | 63   | 50    | 2.5   | 2.8    |
| 7           | 452   | 46       | 26   | 26   | 28   | 1800  | 153  | 107  | 55   | 40    | 2.4   | 5.1    |
| 8           | 263   | 44       | 24   | 24   | 28   | 2240  | 149  | 74   | 46   | 34    | 1.8   | 4.8    |
| 9           | 198   | 12       | 23   | 22   | 33   | 1580  | 140  | 66   | 186  | 35    | 12    | 7.3    |
| 10          | 165   | 10       | 22   | 22   | 37   | 765   | 129  | 57   | 497  | 32    | 15    | 7.7    |
| 11          | 142   | 9.0      | 21   | 27   | 37   | 488   | 119  | 51   | 435  | 25    | 8.8   | 6.1    |
| 12          | 117   | 9.0      | 22   | 32   | 42   | 541   | 119  | 47   | 266  | 21    | 5.4   | 5.5    |
| 13          | 101   | 10       | 24   | 35   | 43   | 470   | 116  | 40   | 187  | 20    | 5.3   | 5.3    |
| 14          | 92    | 15       | 27   | 30   | 45   | 380   | 111  | 37   | 159  | 18    | 4.3   | 5.8    |
| 15          | 85    | 26       | 27   | 24   | 43   | 334   | 105  | 33   | 191  | 17    | 4.2   | 6.1    |
| 16          | 80    | 28       | 27   | 21   | 38   | 271   | 97   | 31   | 187  | 15    | 3.6   | 5.8    |
| 17          | 75    | 27       | 27   | 19   | 38   | 228   | 92   | 32   | 167  | 13    | 3.2   | 5.5    |
| 18          | 70    | 24       | 24   | 22   | 38   | 208   | 82   | 32   | 109  | 13    | 3.1   | 5.3    |
| 19          | 65    | 24       | 22   | 22   | 43   | 192   | 78   | 34   | 87   | 12    | 3.2   | 4.8    |
| 20          | 100   | 27       | 21   | 22   | 45   | 177   | 79   | 125  | 71   | 10    | 3.6   | 3.6    |
| 21          | 74    | 28       | 22   | 24   | 48   | 158   | 73   | 105  | 65   | 9.4   | 3.2   | 2.9    |
| 22          | 70    | 32       | 24   | 24   | 47   | 144   | 68   | 88   | 53   | 8.2   | 4.3   | 2.6    |
| 23          | 66    | 32       | 25   | 23   | 48   | 141   | 66   | 75   | 47   | 7.2   | 4.4   | 2.0    |
| 24          | 64    | 32       | 28   | 24   | 54   | 136   | 64   | 115  | 47   | 6.1   | 4.2   | 1.6    |
| 25          | 63    | 33       | 25   | 24   | 51   | 131   | 62   | 209  | 50   | 5.8   | 4.3   | 1.4    |
| 26          | 56    | 28       | 24   | 28   | 46   | 127   | 57   | 174  | 50   | 5.4   | 4.0   | 1.2    |
| 27          | 54    | 26       | 25   | 32   | 46   | 127   | 50   | 134  | 45   | 4.9   | 3.4   | 1.0    |
| 28          | 52    | 32       | 23   | 33   | 46   | 117   | 49   | 187  | 45   | 4.5   | 4.1   | .71    |
| 29          | 52    | 28       | 24   | 33   | ---  | 119   | 49   | 252  | 40   | 4.3   | 4.9   | .68    |
| 30          | 49    | 33       | 26   | 33   | ---  | 113   | 44   | 279  | 40   | 4.3   | 6.2   | .72    |
| 31          | 47    | ---      | 30   | 32   | ---  | 113   | ---  | 180  | ---  | 4.2   | 5.3   | ---    |
| TOTAL       | 6262  | 864.0    | 751  | 816  | 1057 | 11744 | 3160 | 3025 | 3793 | 669.3 | 143.9 | 113.31 |
| MEAN        | 202   | 28.8     | 24.2 | 26.3 | 37.8 | 379   | 105  | 97.6 | 126  | 21.6  | 4.64  | 3.78   |
| MAX         | 1270  | 46       | 30   | 35   | 54   | 2240  | 255  | 279  | 497  | 70    | 15    | 7.7    |
| MIN         | 47    | 9.0      | 20   | 19   | 19   | 46    | 44   | 30   | 40   | 4.2   | 1.8   | .68    |
| AC-FT       | 12420 | 1710     | 1490 | 1620 | 2100 | 23290 | 6270 | 6000 | 7520 | 1330  | 285   | 225    |
| CAL YR 1986 | TOTAL | 44616.6  |      | MEAN | 122  | MAX   | 2620 | MIN  | 2.0  | AC-FT | 88500 |        |
| WTR YR 1987 | TOTAL | 32398.51 |      | MEAN | 88.8 | MAX   | 2240 | MIN  | .68  | AC-FT | 64260 |        |

06426400 DONKEY CREEK NEAR MOORCROFT, WY

LOCATION.--Lat 44°16'58", long 105°03'48", in SE1/4 NE1/4 SE1/4 sec.30, T.50 N., R.68 W., Crook County, Hydrologic Unit 10120201, 25 ft upstream from county bridge, 1.2 mi downstream from Well Creek, and 6.0 mi west of Moorcroft.

DRAINAGE AREA.--246 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1977 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>02... | 0945 | 3.7                                             | 1760                                              | 8.1                            | 8.5                                  | 660                                                  | 9.0                                 |
| JAN<br>07... | 1445 | 2.3                                             | 3260                                              | 7.6                            | 0.0                                  | 653                                                  | 11.6                                |
| MAR<br>31... | 1655 | 7.0                                             | 2710                                              | 8.6                            | 8.5                                  | 649                                                  | 17.8                                |
| JUN<br>30... | 1140 | 0.72                                            | 2750                                              | 8.2                            | 22.0                                 | 647                                                  | 9.7                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>02... | 89                                                             | 200                                                            | 0.4                                                  | 0.56                                                 | --                                                   | 0.4                                                                | 0.33                                        |
| JAN<br>07... | 94                                                             | K8                                                             | 3.9                                                  | 3.7                                                  | 2.5                                                  | 6.2                                                                | 2.6                                         |
| MAR<br>31... | 181                                                            | <1                                                             | 1.2                                                  | 0.31                                                 | 1.1                                                  | 1.4                                                                | 0.43                                        |
| JUN<br>30... | 133                                                            | 530                                                            | <0.1                                                 | 0.12                                                 | 1.2                                                  | 1.3                                                                | 0.12                                        |

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

## CHEYENNE RIVER BASIN

06426500 BELLE FOURCHE RIVER BELOW MOORCROFT, WY

LOCATION.--Lat 44°17'44", long 104°58'35", in SE1/4 SW1/4 sec. 24, T.50 N., R.68 W., Crook County, Hydrologic Unit 10120201, on left bank 150 ft upstream from Trail Creek, 1.9 mi downstream from Donkey Creek, and 2.6 mi northwest of Moorcroft.

DRAINAGE AREA.--1,670 mi<sup>2</sup>, approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1943 to September 1970, October 1975 to September 1983, October 1985 to September 1987 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 4,119.2 ft, above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Mar. 28, 1947, nonrecording gage, and Mar. 28, 1947, to Jan. 16, 1951, water-stage recorder at site 12 mi downstream at different datum. Jan. 17, 1951, to September 1970, at site 50 ft downstream at datum 0.8 ft lower.

REMARKS.--Estimated daily discharges: Oct. 20 to Nov. 18, Dec. 10-25, Dec. 30 to Mar. 4, and Mar. 28-30. Records fair except those prior to April, which are poor. Numerous small stockwater and soil conservation reservoirs upstream from station. Diversions for irrigation of about 660 acres upstream from station.

AVERAGE DISCHARGE.--37 years (water years 1944-70, 1976-83, 1986-87), 23.2 ft<sup>3</sup>/s, 16,810 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,300 ft<sup>3</sup>/s, May 19, 1978, gage height, 14.60 ft, from floodmark in gage shelter, from rating curve extended above 11,000 ft<sup>3</sup>/s; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 360 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Oct. 4 | 0330 | 545                               | 7.45                | Mar. 7 | 0130 | *2,650                            | *12.20              |

Minimum daily, 1.0 ft<sup>3</sup>/s, Dec. 18-27, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT    | NOV   | DEC  | JAN  | FEB   | MAR    | APR    | MAY    | JUN   | JUL   | AUG   | SEP   |
|-------|--------|-------|------|------|-------|--------|--------|--------|-------|-------|-------|-------|
| 1     | 5.7    | 4.3   | 5.9  | 1.6  | 1.9   | 5.6    | 100    | 6.8    | 30    | 2.5   | 34    | 4.2   |
| 2     | 6.5    | 4.5   | 5.1  | 1.8  | 2.2   | 6.4    | 212    | 6.0    | 24    | 2.5   | 38    | 2.1   |
| 3     | 145    | 4.6   | 4.8  | 2.2  | 2.1   | 7.3    | 114    | 19     | 19    | 2.3   | 47    | 1.4   |
| 4     | 419    | 4.4   | 3.9  | 2.6  | 2.1   | 16     | 132    | 69     | 16    | 142   | 28    | 1.7   |
| 5     | 129    | 4.1   | 3.7  | 3.1  | 2.0   | 327    | 204    | 24     | 15    | 258   | 13    | 5.5   |
| 6     | 65     | 4.0   | 3.0  | 3.3  | 3.3   | 1350   | 176    | 14     | 13    | 46    | 6.4   | 12    |
| 7     | 33     | 3.8   | 3.0  | 3.3  | 3.9   | 2240   | 110    | 11     | 11    | 18    | 3.6   | 21    |
| 8     | 20     | 3.6   | 2.8  | 3.1  | 3.4   | 1170   | 64     | 9.2    | 8.8   | 26    | 7.8   | 16    |
| 9     | 13     | 3.5   | 2.5  | 2.9  | 12    | 318    | 50     | 7.9    | 7.6   | 15    | 6.8   | 43    |
| 10    | 10     | 3.4   | 2.1  | 2.8  | 45    | 111    | 39     | 7.4    | 8.0   | 7.6   | 5.3   | 20    |
| 11    | 8.0    | 3.3   | 1.9  | 2.8  | 110   | 82     | 32     | 6.2    | 9.9   | 7.0   | 6.3   | 13    |
| 12    | 5.7    | 3.4   | 1.6  | 2.8  | 90    | 72     | 29     | 5.9    | 9.3   | 6.1   | 6.0   | 9.6   |
| 13    | 5.7    | 3.6   | 1.5  | 3.0  | 68    | 69     | 25     | 5.4    | 8.2   | 5.3   | 4.5   | 7.2   |
| 14    | 5.3    | 3.9   | 1.4  | 3.1  | 52    | 58     | 24     | 4.4    | 7.7   | 5.2   | 4.3   | 4.2   |
| 15    | 5.1    | 4.2   | 1.2  | 2.8  | 43    | 54     | 22     | 3.9    | 8.3   | 4.3   | 3.9   | 2.8   |
| 16    | 5.0    | 4.4   | 1.1  | 2.4  | 35    | 47     | 20     | 4.1    | 5.9   | 5.1   | 5.9   | 1.7   |
| 17    | 6.6    | 4.5   | 1.1  | 2.1  | 28    | 42     | 19     | 6.8    | 4.3   | 7.1   | 3.3   | 3.7   |
| 18    | 9.0    | 4.6   | 1.0  | 1.8  | 23    | 37     | 17     | 11     | 3.6   | 6.1   | 3.5   | 3.9   |
| 19    | 9.2    | 5.1   | 1.0  | 1.7  | 18    | 35     | 15     | 54     | 3.5   | 17    | 2.2   | 3.6   |
| 20    | 9.6    | 5.9   | 1.0  | 1.8  | 15    | 44     | 14     | 46     | 28    | 27    | 1.6   | 3.5   |
| 21    | 9.1    | 6.3   | 1.0  | 2.0  | 13    | 40     | 13     | 75     | 98    | 12    | 1.3   | 2.6   |
| 22    | 13     | 9.2   | 1.0  | 1.9  | 11    | 45     | 12     | 144    | 78    | 14    | 2.5   | 2.0   |
| 23    | 23     | 61    | 1.0  | 1.7  | 9.8   | 41     | 11     | 61     | 32    | 11    | 1.9   | 1.6   |
| 24    | 18     | 59    | 1.0  | 1.5  | 8.2   | 38     | 11     | 75     | 13    | 6.9   | 1.4   | 1.5   |
| 25    | 12     | 29    | 1.0  | 1.3  | 6.6   | 31     | 10     | 80     | 8.0   | 4.8   | 1.5   | 1.6   |
| 26    | 8.8    | 14    | 1.0  | 1.4  | 5.4   | 40     | 9.2    | 52     | 7.1   | 3.9   | 5.1   | 1.7   |
| 27    | 7.0    | 13    | 1.0  | 1.6  | 4.5   | 43     | 8.2    | 62     | 6.4   | 3.3   | 4.4   | 1.7   |
| 28    | 5.8    | 9.5   | 1.1  | 1.8  | 4.8   | 40     | 7.6    | 64     | 5.7   | 3.4   | 2.8   | 1.5   |
| 29    | 5.0    | 7.7   | 1.0  | 1.8  | ---   | 24     | 7.2    | 48     | 3.8   | 35    | 1.9   | 1.5   |
| 30    | 4.8    | 5.9   | 1.2  | 1.9  | ---   | 29     | 7.0    | 71     | 3.0   | 40    | 2.9   | 1.4   |
| 31    | 4.6    | ---   | 1.4  | 1.8  | ---   | 35     | ---    | 78     | ---   | 47    | 11    | ---   |
| TOTAL | 1026.5 | 297.7 | 61.3 | 69.7 | 623.2 | 6497.3 | 1514.2 | 1132.0 | 496.1 | 791.4 | 268.1 | 197.2 |
| MEAN  | 33.1   | 9.92  | 1.98 | 2.25 | 22.3  | 210    | 50.5   | 36.5   | 16.5  | 25.5  | 8.65  | 6.57  |
| MAX   | 419    | 61    | 5.9  | 3.3  | 110   | 2240   | 212    | 144    | 98    | 258   | 47    | 43    |
| MIN   | 4.6    | 3.3   | 1.0  | 1.3  | 1.9   | 5.6    | 7.0    | 3.9    | 3.0   | 2.3   | 1.3   | 1.4   |
| AC-FT | 2040   | 590   | 122  | 138  | 1240  | 12890  | 3000   | 2250   | 984   | 1570  | 532   | 391   |

|             |       |         |      |      |     |      |     |     |       |       |
|-------------|-------|---------|------|------|-----|------|-----|-----|-------|-------|
| CAL YR 1986 | TOTAL | 8579.78 | MEAN | 23.5 | MAX | 681  | MIN | .00 | AC-FT | 17020 |
| WTR YR 1987 | TOTAL | 12974.7 | MEAN | 35.5 | MAX | 2240 | MIN | 1.0 | AC-FT | 25740 |

06426500 BELLE FOURCHE RIVER BELOW MOORCROFT, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947-57, 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------|----------------------------------------------|
| NOV<br>19... | 0920 | 4.8                                             | 3250                                              | 8.2                            | 7.0                                  | 644                                                  | 13.9                                | 137                                                            | K1                                                             | --                                     | --                                           |
| JAN<br>07... | 1045 | 3.4                                             | 3810                                              | 7.7                            | 0.0                                  | 657                                                  | 8.4                                 | 68                                                             | <1                                                             | 1000                                   | 190                                          |
| FEB<br>11... | 1100 | 64                                              | 665                                               | 7.7                            | 0.0                                  | --                                                   | --                                  | --                                                             | --                                                             | 200                                    | 42                                           |
| MAR<br>04... | 1450 | 11                                              | 2300                                              | 7.9                            | 0.0                                  | --                                                   | --                                  | --                                                             | --                                                             | 640                                    | 130                                          |
| APR<br>02... | 1010 | 238                                             | 840                                               | 7.9                            | 1.0                                  | 659                                                  | 11.5                                | 94                                                             | K13                                                            | 260                                    | 49                                           |
| MAY<br>05... | 1700 | 20                                              | 1340                                              | 8.1                            | 18.0                                 | --                                                   | --                                  | --                                                             | --                                                             | 380                                    | 76                                           |
| JUN<br>28... | 1045 | 66                                              | 1200                                              | 8.0                            | 15.0                                 | --                                                   | --                                  | --                                                             | --                                                             | 340                                    | 63                                           |
| JUL<br>30... | 1415 | 2.8                                             | 1900                                              | 8.3                            | 24.5                                 | 648                                                  | 9.6                                 | 137                                                            | 87                                                             | 610                                    | 120                                          |
| AUG<br>22... | 1645 | 15                                              | 1240                                              | 8.3                            | 27.0                                 | --                                                   | --                                  | --                                                             | --                                                             | 320                                    | 68                                           |
| SEP<br>19... | 1630 | 2.2                                             | 2600                                              | 8.3                            | 23.0                                 | --                                                   | --                                  | --                                                             | --                                                             | 640                                    | 110                                          |
| SEP<br>30... | 1125 | 1.3                                             | 2970                                              | 8.3                            | 12.0                                 | --                                                   | --                                  | --                                                             | --                                                             | 780                                    | 130                                          |

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

| DATE         | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) |
|--------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|
| NOV<br>19... | --                                                   | --                                           | --                                      | --                                                  | --                                              | --                                            | --                                                  | --                                                 | --                                                | --                                                             | --                                                  |
| JAN<br>07... | 130                                                  | 490                                          | 7                                       | 16                                                  | 510                                             | 1300                                          | 180                                                 | 1.2                                                | 8.3                                               | 2600                                                           | 3.6                                                 |
| FEB<br>11... | 23                                                   | 57                                           | 2                                       | 8.3                                                 | 87                                              | 200                                           | 27                                                  | 0.3                                                | 7.2                                               | 420                                                            | 0.57                                                |
| MAR<br>04... | 77                                                   | 220                                          | 4                                       | 10                                                  | 280                                             | 680                                           | 67                                                  | 0.5                                                | 8.0                                               | 1400                                                           | 1.9                                                 |
| APR<br>02... | 33                                                   | 78                                           | 2                                       | 5.2                                                 | 100                                             | 280                                           | 21                                                  | 0.3                                                | 5.8                                               | 530                                                            | 0.72                                                |
| MAY<br>05... | 46                                                   | 160                                          | 4                                       | 7.1                                                 | 150                                             | 510                                           | 26                                                  | 0.4                                                | 4.6                                               | 920                                                            | 1.3                                                 |
| JUN<br>28... | 45                                                   | 120                                          | 3                                       | 5.9                                                 | 120                                             | 420                                           | 22                                                  | 0.3                                                | 5.8                                               | 750                                                            | 1.0                                                 |
| JUL<br>30... | 76                                                   | 240                                          | 4                                       | 11                                                  | 290                                             | 780                                           | 44                                                  | 0.5                                                | 4.4                                               | 1400                                                           | 2.0                                                 |
| AUG<br>22... | 37                                                   | 140                                          | 3                                       | 10                                                  | 200                                             | 370                                           | 44                                                  | 0.4                                                | 6.7                                               | 800                                                            | 1.1                                                 |
| SEP<br>19... | 88                                                   | 340                                          | 6                                       | 11                                                  | 258                                             | 870                                           | 120                                                 | 0.1                                                | 2.3                                               | 1700                                                           | 2.3                                                 |
| SEP<br>30... | 110                                                  | 400                                          | 6                                       | 12                                                  | 380                                             | 1100                                          | 93                                                  | 0.8                                                | 1.6                                               | 2100                                                           | 2.8                                                 |



## CHEYENNE RIVER BASIN

06426500 BELLE FOURCHE RIVER BELOW MOORCROFT, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|--------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|-------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| NOV<br>19... | --                                                | 0.8                                                  | --                                                            | 0.66                                                 | 1.0                                                  | 1.7                                                                | 0.22                                        | 166                                       | 2.2                                                           | --                                                            |
| JAN<br>07... | 24                                                | 2.0                                                  | 2.5                                                           | 2.40                                                 | 0.4                                                  | 2.8                                                                | 0.68                                        | 142                                       | 1.3                                                           | --                                                            |
| FEB<br>11... | 72                                                | --                                                   | 0.3                                                           | --                                                   | --                                                   | --                                                                 | 0.47                                        | 244                                       | 42                                                            | 100                                                           |
| MAR<br>04... | 40                                                | --                                                   | 1.9                                                           | --                                                   | --                                                   | --                                                                 | 0.36                                        | 42                                        | 1.2                                                           | --                                                            |
| APR<br>02... | 342                                               | 0.2                                                  | 0.3                                                           | 0.17                                                 | 3.5                                                  | 3.7                                                                | 0.67                                        | 2270                                      | 1460                                                          | --                                                            |
| MAY<br>05... | 50                                                | --                                                   | 0.2                                                           | --                                                   | --                                                   | --                                                                 | 0.38                                        | 1430                                      | 77                                                            | --                                                            |
| 28...        | 134                                               | --                                                   | 0.1                                                           | --                                                   | --                                                   | --                                                                 | 0.40                                        | 340                                       | 61                                                            | --                                                            |
| JUN<br>30... | 11                                                | <0.1                                                 | <0.1                                                          | 0.07                                                 | 1.3                                                  | 1.4                                                                | 0.14                                        | 86                                        | 0.65                                                          | --                                                            |
| JUL<br>22... | 32                                                | --                                                   | <0.1                                                          | --                                                   | --                                                   | --                                                                 | 0.20                                        | 126                                       | 5.1                                                           | --                                                            |
| AUG<br>19... | 10                                                | --                                                   | <0.1                                                          | --                                                   | --                                                   | --                                                                 | 0.13                                        | 130                                       | 0.77                                                          | --                                                            |
| SEP<br>30... | 7.3                                               | --                                                   | <0.1                                                          | --                                                   | --                                                   | --                                                                 | 0.12                                        | 207                                       | 0.73                                                          | --                                                            |

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| MAY<br>05... | 1700 | 20                                              | 18.0                                 | 0.01                                                            | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUN<br>30... | 1415 | 2.8                                             | 24.5                                 | <0.01                                                           | 0.06                                                         | 0.07                      | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>30... | 1125 | 1.3                                             | 12.0                                 | 0.01                                                            | 0.03                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.004 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.008 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.016 MM |
|--------------|------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| APR<br>02... | 1010 | 81                                                           | 92                                                           | 96                                                           |
| MAY<br>05... | 1700 | 91                                                           | 94                                                           | 97                                                           |

| DATE         | TIME | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.125 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.250 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.500 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>1.00 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>2.00 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>4.00 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>8.00 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>16.0 MM | BED<br>MAT.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>32.0 MM |
|--------------|------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
| APR<br>02... | 1010 | --                                                          | --                                                          | --                                                          | --                                                          | 97                                                          | 99                                                          | 100                                                         | --                                                          | --                                                          | --                                                          |
| JUN<br>30... | 1415 | 1                                                           | 2                                                           | 4                                                           | 10                                                          | 19                                                          | 28                                                          | 42                                                          | 66                                                          | 92                                                          | 100                                                         |

## 06427000 KEYHOLE RESERVOIR NEAR MOORCROFT, WY

LOCATION.--Lat 44°22'55", long 104°46'45", in NW1/4 NW1/4 sec.27, T.51 N., R.66 W., Crook County, Hydrologic Unit 10120201, at reservoir dam on Belle Fourche River 12 mi northeast of Moorcroft.

DRAINAGE AREA.--2,000 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--March 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum). Prior to May 15, 1958, and Oct. 1, 1968 to Mar. 13, 1970, nonrecording gages; May 15 1958, to Sept. 30, 1968, water-stage recorder; all at present site and datum.

REMARKS.--Reservoir is formed by a zoned earthfill dam completed by the Bureau of Reclamation Oct. 25, 1952. Storage began Feb. 12, 1952. Dead storage, below elevation 4,036.0 ft, 730 acre-ft. Inactive storage, between elevations 4,036.0 ft and 4,051.0 ft, 7,230 acre-ft. Total capacity below elevation 4,099.3 ft, crest of spillway, 193,800 acre-ft. Figures given herein represent total contents. The reservoir provides flood control and water for irrigation in Wyoming and near Belle Fourche, SD.

COOPERATION.--Records provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 210,200 acre-ft, May 21, 1978, elevation, 4,100.38 ft; minimum daily (since appreciable storage was attained), 6,030 acre-ft, May. 8, 9, 1955, elevation, 4,046.35 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 93,010 acre-ft, June 6, elevation, 4,085.11 ft; minimum daily, 63,960 acre-ft, Oct. 1, elevation, 4,078.48 ft.

## MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| Date                  | Elevation<br>(feet) | Contents<br>(acre-feet) | Change in contents<br>(acre-feet) |
|-----------------------|---------------------|-------------------------|-----------------------------------|
| Sept. 30 . . . . .    | 4,078.47            | 63,920                  | -                                 |
| Oct. 31 . . . . .     | 4,079.04            | 66,090                  | +2,170                            |
| Nov. 30 . . . . .     | 4,079.19            | 66,670                  | +580                              |
| Dec. 31 . . . . .     | 4,079.16            | 66,550                  | -120                              |
| CAL YR 1986 . . . . . | -                   | -                       | +10,790                           |
| Jan. 31 . . . . .     | 4,079.15            | 66,510                  | -40                               |
| Feb. 28 . . . . .     | 4,079.81            | 69,090                  | +2,580                            |
| Mar. 31 . . . . .     | 4,083.36            | 84,440                  | +15,350                           |
| Apr. 30 . . . . .     | 4,084.05            | 87,740                  | +3,300                            |
| May 31 . . . . .      | 4,085.03            | 92,600                  | +4,860                            |
| June 30 . . . . .     | 4,084.56            | 90,250                  | -2,350                            |
| July 31 . . . . .     | 4,083.21            | 83,740                  | -6,510                            |
| Aug. 31 . . . . .     | 4,082.27            | 79,440                  | -4,300                            |
| Sept. 30 . . . . .    | 4,082.09            | 78,640                  | -800                              |
| WTR YR 1987 . . . . . | -                   | -                       | +14,720                           |

## 06427500 BELLE FOURCHE RIVER BELOW KEYHOLE RESERVOIR, WY

LOCATION.--Lat 44°23'18", long 104°46'12", in SE1/4 NE1/4 SW1/4 sec.22, T.51 N., R.66 W., Crook County, Hydrologic Unit 10120201, on right bank 0.9 mi downstream from Keyhole Dam, 1.7 mi downstream from Mule Creek, 2.9 mi upstream from Spring Creek, and 12 mi northeast of Moorcroft.

DRAINAGE AREA.--2,000 mi<sup>2</sup>, approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1951 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,020 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 30, 1979, at site 0.7 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 13-18, Dec. 10-31, Jan. 1-6, 9-31, Feb. 1-10, Mar. 30, 31, and Sept. 4-30. Records good except those for estimated daily discharges, which are fair. Flow completely regulated by Keyhole Reservoir, 0.9 mi upstream, since February 1952. (See sta 06427000.) Diversions for irrigation of about 820 acres upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,410 ft<sup>3</sup>/s, May 23, 1978, gage height, 10.65 ft, at present site and datum; minimum daily since appreciable storage in Keyhole Reservoir, 0.30 ft<sup>3</sup>/s, Feb. 6-20, 1960; no flow at times in 1951-52.

EXTREMES FOR CURRENT YEAR: Maximum discharge, 171 ft<sup>3</sup>/s, June 27, gage height, 6.83 ft; minimum daily, 1.4 ft<sup>3</sup>/s, June 5, 12-14, and Aug. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|--------|------|------|------|------|------|------|-------|-------|--------|------|
| 1           | 2.1   | 2.1    | 2.0  | 2.0  | 1.7  | 1.8  | 1.7  | 1.7  | 1.7   | 162   | 96     | 1.5  |
| 2           | 2.2   | 2.1    | 2.0  | 2.0  | 1.7  | 1.8  | 1.7  | 1.8  | 1.5   | 162   | 97     | 1.7  |
| 3           | 2.1   | 2.1    | 2.0  | 2.0  | 1.7  | 1.7  | 1.7  | 1.7  | 1.5   | 163   | 96     | 1.5  |
| 4           | 1.5   | 2.1    | 2.0  | 2.0  | 1.7  | 2.0  | 1.8  | 1.5  | 1.5   | 160   | 96     | 1.5  |
| 5           | 1.8   | 2.1    | 2.1  | 2.0  | 1.7  | 2.3  | 2.0  | 1.6  | 1.4   | 160   | 96     | 1.5  |
| 6           | 1.8   | 2.1    | 2.1  | 2.0  | 1.7  | 2.0  | 2.0  | 1.7  | 1.5   | 159   | 96     | 1.5  |
| 7           | 1.8   | 2.1    | 2.1  | 1.8  | 1.6  | 2.0  | 2.0  | 1.7  | 1.7   | 160   | 95     | 1.5  |
| 8           | 2.0   | 2.1    | 2.1  | 1.9  | 1.6  | 2.0  | 2.0  | 1.5  | 1.7   | 145   | 95     | 1.5  |
| 9           | 2.0   | 2.1    | 2.1  | 1.9  | 1.6  | 1.8  | 2.0  | 1.7  | 1.7   | 132   | 95     | 1.5  |
| 10          | 1.8   | 2.1    | 2.1  | 1.9  | 1.6  | 1.8  | 1.7  | 1.8  | 1.7   | 130   | 95     | 1.5  |
| 11          | 2.0   | 2.1    | 2.1  | 1.9  | 1.7  | 1.8  | 1.5  | 1.8  | 1.5   | 129   | 82     | 1.6  |
| 12          | 2.1   | 2.0    | 2.0  | 1.9  | 1.7  | 2.0  | 1.5  | 1.8  | 1.4   | 130   | 69     | 1.6  |
| 13          | 2.0   | 2.0    | 2.0  | 1.9  | 1.7  | 2.0  | 1.5  | 1.8  | 1.4   | 132   | 69     | 1.6  |
| 14          | 2.0   | 2.0    | 2.0  | 1.9  | 1.7  | 2.0  | 1.5  | 1.7  | 1.4   | 133   | 37     | 1.6  |
| 15          | 2.0   | 2.0    | 2.0  | 1.9  | 1.7  | 2.0  | 1.8  | 1.7  | 1.7   | 133   | 2.5    | 1.6  |
| 16          | 2.0   | 2.0    | 2.0  | 1.8  | 1.7  | 2.0  | 1.8  | 1.8  | 1.7   | 134   | 2.0    | 1.6  |
| 17          | 2.1   | 2.0    | 2.0  | 1.8  | 1.7  | 2.0  | 1.8  | 2.1  | 1.5   | 135   | 2.0    | 1.6  |
| 18          | 1.8   | 1.9    | 2.0  | 1.8  | 1.7  | 2.0  | 1.6  | 1.8  | 1.7   | 134   | 2.0    | 1.6  |
| 19          | 1.8   | 1.8    | 2.0  | 1.8  | 1.7  | 2.0  | 1.8  | 1.7  | 1.7   | 134   | 2.1    | 1.6  |
| 20          | 2.0   | 1.8    | 2.0  | 1.8  | 1.8  | 2.2  | 1.8  | 1.7  | 1.8   | 134   | 1.8    | 1.6  |
| 21          | 2.0   | 1.8    | 2.0  | 1.8  | 1.8  | 3.8  | 1.8  | 1.7  | 1.8   | 136   | 2.0    | 1.6  |
| 22          | 2.1   | 2.0    | 2.0  | 1.8  | 1.8  | 1.8  | 1.7  | 1.5  | 1.7   | 135   | 2.0    | 1.7  |
| 23          | 2.1   | 2.0    | 2.0  | 1.8  | 1.8  | 1.8  | 1.7  | 1.7  | 1.8   | 133   | 2.0    | 1.7  |
| 24          | 2.3   | 2.0    | 2.0  | 1.8  | 1.8  | 1.8  | 1.7  | 1.7  | 1.8   | 120   | 2.1    | 1.7  |
| 25          | 2.1   | 1.9    | 2.0  | 1.8  | 1.8  | 1.8  | 1.7  | 1.8  | 1.8   | 104   | 2.0    | 1.7  |
| 26          | 2.0   | 1.9    | 2.0  | 1.8  | 1.8  | 1.8  | 2.0  | 1.7  | 1.9   | 104   | 2.0    | 1.7  |
| 27          | 2.0   | 2.0    | 2.0  | 1.8  | 1.8  | 1.8  | 1.8  | 1.7  | 29    | 102   | 1.8    | 1.7  |
| 28          | 2.0   | 2.0    | 2.0  | 1.7  | 1.8  | 1.7  | 1.5  | 1.7  | 165   | 100   | 1.8    | 1.7  |
| 29          | 2.0   | 2.0    | 2.0  | 1.7  | ---  | 1.7  | 1.7  | 1.7  | 160   | 100   | 1.8    | 1.7  |
| 30          | 2.1   | 2.0    | 2.0  | 1.7  | ---  | 1.7  | 1.7  | 1.5  | 160   | 98    | 1.4    | 1.7  |
| 31          | 2.1   | ---    | 2.0  | 1.7  | ---  | 1.7  | ---  | 1.7  | ---   | 97    | 1.5    | ---  |
| TOTAL       | 61.7  | 60.2   | 62.7 | 57.4 | 48.1 | 60.6 | 52.5 | 53.0 | 556.5 | 4090  | 1246.8 | 48.1 |
| MEAN        | 1.99  | 2.01   | 2.02 | 1.85 | 1.72 | 1.95 | 1.75 | 1.71 | 18.6  | 132   | 40.2   | 1.60 |
| MAX         | 2.3   | 2.1    | 2.1  | 2.0  | 1.8  | 3.8  | 2.0  | 2.1  | 165   | 163   | 97     | 1.7  |
| MIN         | 1.5   | 1.8    | 2.0  | 1.7  | 1.6  | 1.7  | 1.5  | 1.5  | 1.4   | 97    | 1.4    | 1.5  |
| AC-FT       | 122   | 119    | 124  | 114  | 95   | 120  | 104  | 105  | 1100  | 8110  | 2470   | 95   |
| CAL YR 1986 | TOTAL | 5476.6 |      | MEAN | 15.0 | MAX  | 126  | MIN  | 1.4   | AC-FT | 10860  |      |
| WTR YR 1987 | TOTAL | 6397.6 |      | MEAN | 17.5 | MAX  | 165  | MIN  | 1.4   | AC-FT | 12690  |      |

06427500 BELLE FOURCHE RIVER BELOW KEYHOLE RESERVOIR, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1984 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| OCT<br>02... | 1230 | 2.6                                             | 8.5                                  | 0.01                                                            | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>01... | 0825 | 159                                             | 18.0                                 | 0.06                                                            | 0.10                                                         | 0.04                      | <0.01                      | <0.01                      | <0.01                      |
| 22...        | 1515 | 134                                             | 21.0                                 | 0.08                                                            | 0.01                                                         | 0.03                      | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>30... | 1350 | 1.7                                             | 15.5                                 | <0.01                                                           | 0.03                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

06427850 BELLE FOURCHE RIVER AT DEVILS TOWER, WY

LOCATION.--Lat 44°35'22", long 104°42'12", in NW1/4 SE1/4 SE1/4 sec.7, T.53 N., R.65 W., Crook County, Hydrologic Unit 10120201, at bridge 0.2 mi west of entrance to Devils Tower National Monument.

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

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| OCT<br>02... | 1345 | 17                                              | 9.5                                  | <0.01                                                           | 0.31                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| MAY<br>05... | 1135 | 47                                              | 17.5                                 | <0.01                                                           | 0.09                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>01... | 1010 | 144                                             | 20.5                                 | 0.05                                                            | 0.12                                                         | 0.04                      | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>19... | 1100 | 8.6                                             | 17.0                                 | 0.01                                                            | 0.41                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>30... | 1530 | 4.3                                             | 17.5                                 | <0.01                                                           | 0.21                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## CHEYENNE RIVER BASIN

06428050 BELLE FOURCHE RIVER BELOW HULETT, WY

LOCATION.--Lat 44°42'04", long 104°35'07", in SW1/4 NE1/4 sec.6, T.54 N., R.64 W., Crook County, Hydrologic Unit 10120201, at bridge, 1.3 mi northeast of Hulett, and 4.7 mi downstream from Blacktail Creek.

PERIOD OF RECORD.--February 1981 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>02... | 1500 | 31                                              | 1400                                              | 8.6                            | 9.5                                  | 670                                                  | 10.4                                |
| JAN<br>06... | 1530 | 10                                              | 2260                                              | 8.1                            | 0.0                                  | 665                                                  | 16.4                                |
| APR<br>01... | 1430 | 48                                              | 1770                                              | 8.4                            | 7.0                                  | 668                                                  | 12.8                                |
| JUL<br>01... | 1130 | 138                                             | 1240                                              | 8.1                            | 20.5                                 | 660                                                  | 7.5                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>02... | 104                                                            | 290                                                            | 0.1                                                  | 0.08                                                 | 4.0                                                  | 4.1                                                                | 0.04                                        |
| JAN<br>06... | 130                                                            | 110                                                            | 0.1                                                  | 0.11                                                 | 0.99                                                 | 1.1                                                                | 0.02                                        |
| APR<br>01... | 121                                                            | K3                                                             | <0.1                                                 | 0.10                                                 | 0.70                                                 | 0.8                                                                | 0.04                                        |
| JUL<br>01... | 97                                                             | 760                                                            | <0.1                                                 | 0.06                                                 | 1.4                                                  | 1.5                                                                | 0.11                                        |

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

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2,4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|---------------------------|----------------------------|----------------------------|
| OCT<br>02... | 1500 | 31                                              | 9.5                                  | 0.01                                                            | 0.60                                                         | <0.01                     | <0.01                     | <0.01                      | <0.01                      |
| MAY<br>05... | 1255 | 58                                              | 18.0                                 | <0.01                                                           | 0.32                                                         | <0.01                     | <0.01                     | <0.01                      | <0.01                      |
| JUL<br>01... | 1130 | 138                                             | 20.5                                 | 0.04                                                            | 0.13                                                         | 0.01                      | <0.01                     | <0.01                      | <0.01                      |
| AUG<br>19... | 1235 | 20                                              | 20.0                                 | 0.01                                                            | 0.60                                                         | 0.01                      | <0.01                     | <0.01                      | <0.01                      |

## 06428500 BELLE FOURCHE RIVER AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°44'59", long 104°02'49", in NE1/4 NW1/4 NW1/4 sec.18, T.9 N., R.1 E., Butte County, Hydrologic Unit 10120202, on left bank 0.3 mi downstream from State line, 3.7 mi downstream from Oak Creek, and 11 mi northwest of Belle Fourche, SD.

DRAINAGE AREA.--3,280 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--December 1946 to current year. Records for water year 1947 incomplete, yearly estimate published in WSP 1729.

GAGE.--Water-stage recorder. Datum of gage is 3,095.7 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for periods of estimated record, which are poor. Estimated daily discharges during water year: Nov. 9 to Feb. 19, Feb. 26 to Mar. 3, and Mar. 10, 11, 26-30. Diversions upstream from station for irrigation of about 5,400 acres. Flow regulated by Keyhole Dam, usable capacity, 191,600 acre-ft, 143 mi upstream since Oct. 25, 1952.

AVERAGE DISCHARGE.--41 years, 89.7 ft<sup>3</sup>/s, 64,990 acre-ft/yr; median of yearly mean discharges, 85 ft<sup>3</sup>/s, 61,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,400 ft<sup>3</sup>/s, June 18, 1962, gage height, 15.59 ft; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 792 ft<sup>3</sup>/s at 1430 hours, Mar. 9, gage height, 8.12 ft; minimum daily discharge, 12 ft<sup>3</sup>/s, Jan. 24-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN  | FEB  | MAR  | APR   | MAY  | JUN  | JUL   | AUG   | SEP  |
|-------------|-------|---------|------|------|------|------|-------|------|------|-------|-------|------|
| 1           | 65    | 26      | 30   | 26   | 15   | 65   | 158   | 97   | 184  | 56    | 112   | 39   |
| 2           | 57    | 23      | 29   | 22   | 15   | 70   | 165   | 95   | 159  | 113   | 105   | 41   |
| 3           | 117   | 23      | 30   | 19   | 16   | 70   | 172   | 192  | 146  | 121   | 96    | 40   |
| 4           | 112   | 23      | 29   | 20   | 16   | 71   | 362   | 114  | 133  | 125   | 95    | 29   |
| 5           | 75    | 24      | 28   | 20   | 14   | 102  | 537   | 99   | 120  | 130   | 96    | 51   |
| 6           | 117   | 24      | 27   | 19   | 15   | 97   | 578   | 95   | 113  | 127   | 93    | 49   |
| 7           | 95    | 32      | 28   | 18   | 15   | 102  | 523   | 95   | 106  | 132   | 100   | 38   |
| 8           | 76    | 34      | 30   | 18   | 16   | 317  | 453   | 93   | 107  | 132   | 114   | 36   |
| 9           | 65    | 35      | 26   | 16   | 16   | 681  | 432   | 80   | 104  | 137   | 113   | 32   |
| 10          | 55    | 30      | 20   | 15   | 17   | 500  | 346   | 73   | 102  | 139   | 104   | 31   |
| 11          | 50    | 27      | 23   | 15   | 20   | 300  | 258   | 68   | 93   | 140   | 105   | 31   |
| 12          | 45    | 25      | 27   | 16   | 23   | 226  | 214   | 65   | 76   | 147   | 99    | 31   |
| 13          | 40    | 23      | 27   | 20   | 30   | 165  | 187   | 62   | 71   | 132   | 295   | 30   |
| 14          | 38    | 20      | 30   | 17   | 33   | 141  | 163   | 58   | 66   | 131   | 143   | 29   |
| 15          | 43    | 20      | 30   | 16   | 40   | 126  | 147   | 54   | 62   | 126   | 106   | 28   |
| 16          | 41    | 21      | 31   | 15   | 50   | 123  | 138   | 51   | 55   | 124   | 97    | 27   |
| 17          | 41    | 21      | 31   | 14   | 56   | 126  | 139   | 58   | 55   | 117   | 94    | 26   |
| 18          | 39    | 20      | 30   | 13   | 60   | 130  | 144   | 56   | 52   | 114   | 78    | 26   |
| 19          | 37    | 20      | 30   | 15   | 63   | 126  | 148   | 60   | 48   | 123   | 67    | 25   |
| 20          | 37    | 21      | 28   | 14   | 64   | 139  | 155   | 98   | 47   | 137   | 60    | 24   |
| 21          | 34    | 21      | 30   | 14   | 66   | 93   | 154   | 185  | 42   | 158   | 50    | 23   |
| 22          | 34    | 22      | 31   | 13   | 50   | 33   | 142   | 127  | 42   | 138   | 46    | 22   |
| 23          | 49    | 25      | 31   | 13   | 46   | 71   | 130   | 210  | 46   | 129   | 47    | 24   |
| 24          | 43    | 28      | 30   | 12   | 26   | 121  | 121   | 227  | 41   | 126   | 45    | 26   |
| 25          | 39    | 37      | 30   | 12   | 47   | 123  | 118   | 199  | 33   | 123   | 44    | 27   |
| 26          | 38    | 32      | 26   | 12   | 70   | 100  | 116   | 262  | 31   | 129   | 44    | 28   |
| 27          | 35    | 32      | 28   | 12   | 70   | 90   | 117   | 294  | 29   | 116   | 44    | 21   |
| 28          | 33    | 34      | 30   | 13   | 70   | 80   | 114   | 325  | 25   | 100   | 43    | 19   |
| 29          | 32    | 33      | 30   | 13   | ---  | 70   | 109   | 377  | 22   | 98    | 41    | 19   |
| 30          | 29    | 32      | 30   | 14   | ---  | 65   | 105   | 292  | 24   | 98    | 38    | 21   |
| 31          | 28    | ---     | 30   | 14   | ---  | 75   | ---   | 218  | ---  | 100   | 43    | ---  |
| TOTAL       | 1639  | 788     | 890  | 490  | 1039 | 4598 | 6645  | 4379 | 2234 | 3818  | 2657  | 893  |
| MEAN        | 52.9  | 26.3    | 28.7 | 15.8 | 37.1 | 148  | 222   | 141  | 74.5 | 123   | 85.7  | 29.8 |
| MAX         | 117   | 37      | 31   | 26   | 70   | 681  | 578   | 377  | 184  | 158   | 295   | 51   |
| MIN         | 28    | 20      | 20   | 12   | 14   | 33   | 105   | 51   | 22   | 56    | 38    | 19   |
| AC-FT       | 3250  | 1560    | 1770 | 972  | 2060 | 9120 | 13180 | 8690 | 4430 | 7570  | 5270  | 1770 |
| CAL YR 1986 | TOTAL | 30079.0 |      | MEAN | 82.4 | MAX  | 921   | MIN  | 9.0  | AC-FT | 59660 |      |
| WTR YR 1987 | TOTAL | 30070   |      | MEAN | 82.4 | MAX  | 681   | MIN  | 12   | AC-FT | 59640 |      |



## 06429997 MURRAY DITCH ABOVE HEADGATE AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34'35", long 104°03'20", in SW1/4 SW1/4 sec.7, T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203, on right bank at State line and 12 mi southwest of Belle Fourche, SD.

PERIOD OF RECORD.--April to September 1987.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 3,440 ft above National Geodetic Vertical Datum of 1929, from topographic map. June 1954 to Apr. 22, 1987, water-stage recorder at site 15 ft downstream at same datum (irrigation seasons only prior to October 1959).

REMARKS.--No estimated daily discharges during period of record. Records good. Ditch diverts water from left bank of Redwater Creek, 2.0 mi upstream, for irrigation of about 700 acres. Flow maintained during irrigation season only.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 26 ft<sup>3</sup>/s, June 26, 1987; no flow for many days in 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN    | JUL   | AUG   | SEP    |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|--------|-------|-------|--------|
| 1     |     |     |     |     |     |     | --- | .00 | .00    | 25    | 9.2   | 20     |
| 2     |     |     |     |     |     |     | --- | .00 | .00    | 25    | 10    | 15     |
| 3     |     |     |     |     |     |     | --- | .00 | .00    | 22    | 9.1   | 18     |
| 4     |     |     |     |     |     |     | --- | .00 | .00    | 19    | 8.7   | 18     |
| 5     |     |     |     |     |     |     | --- | .00 | .00    | 19    | 8.5   | 19     |
| 6     |     |     |     |     |     |     | --- | .00 | .00    | 21    | 8.5   | 20     |
| 7     |     |     |     |     |     |     | --- | .00 | .00    | 18    | 9.0   | 19     |
| 8     |     |     |     |     |     |     | --- | .00 | .00    | 9.0   | 7.8   | 16     |
| 9     |     |     |     |     |     |     | --- | .00 | .00    | 9.0   | 7.6   | 16     |
| 10    |     |     |     |     |     |     | --- | .00 | 4.4    | 8.7   | 7.3   | 11     |
| 11    |     |     |     |     |     |     | --- | .00 | 7.0    | 8.7   | 7.9   | .00    |
| 12    |     |     |     |     |     |     | --- | .00 | 6.9    | 8.5   | 10    | .00    |
| 13    |     |     |     |     |     |     | --- | .00 | 6.5    | 7.7   | 10    | .00    |
| 14    |     |     |     |     |     |     | --- | .00 | 6.6    | 7.5   | 11    | .00    |
| 15    |     |     |     |     |     |     | --- | .00 | 6.5    | 7.3   | 15    | .00    |
| 16    |     |     |     |     |     |     | --- | .00 | 6.3    | 7.3   | 15    | .00    |
| 17    |     |     |     |     |     |     | --- | .00 | 6.0    | 7.3   | 16    | .00    |
| 18    |     |     |     |     |     |     | --- | .00 | 5.9    | 5.8   | 18    | .00    |
| 19    |     |     |     |     |     |     | --- | .00 | 5.9    | 2.5   | 17    | .00    |
| 20    |     |     |     |     |     |     | --- | .00 | 5.9    | 7.5   | 18    | .00    |
| 21    |     |     |     |     |     |     | --- | .00 | 5.9    | 7.1   | 18    | .00    |
| 22    |     |     |     |     |     |     | --- | .00 | 5.7    | 6.9   | 19    | .00    |
| 23    |     |     |     |     |     |     | .00 | .00 | 6.6    | 7.8   | 18    | .00    |
| 24    |     |     |     |     |     |     | .00 | .00 | 11     | 7.7   | 18    | .00    |
| 25    |     |     |     |     |     |     | .00 | .00 | 16     | 7.6   | 20    | .00    |
| 26    |     |     |     |     |     |     | .00 | .00 | 26     | 7.6   | 21    | .00    |
| 27    |     |     |     |     |     |     | .00 | .00 | 24     | 7.6   | 21    | .00    |
| 28    |     |     |     |     |     |     | .00 | .00 | 23     | 7.3   | 22    | .00    |
| 29    |     |     |     |     |     |     | .00 | .00 | 24     | 6.9   | 16    | .00    |
| 30    |     |     |     |     |     |     | .00 | .00 | 25     | 7.1   | 14    | .00    |
| 31    |     |     |     |     |     |     | --- | .00 | ---    | 8.8   | 19    | ---    |
| TOTAL |     |     |     |     |     |     | --- | .00 | 235.10 | 328.2 | 429.6 | 172.00 |
| MEAN  |     |     |     |     |     |     | --- | .00 | 7.84   | 10.6  | 13.9  | 5.73   |
| MAX   |     |     |     |     |     |     | --- | .00 | 26     | 25    | 22    | 20     |
| MIN   |     |     |     |     |     |     | --- | .00 | .00    | 2.5   | 7.3   | .00    |

## 06430000 MURRAY DITCH AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34'35", long 104°02'58", in SW1/4 SW1/4 sec.7, T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203, on right bank 15 ft downstream from State line and 12 mi southwest of Belle Fourche, SD.

PERIOD OF RECORD.--June 1954 to April 1987, discontinued (irrigation seasons only prior to October 1959).

GAGE.--Water-stage recorder. Elevation of gage is 3,440 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges during period. Records good. Ditch diverts water from left bank of Redwater Creek, 2.0 mi upstream, for irrigation of about 700 acres. Flow maintained during irrigation season only.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 37 ft<sup>3</sup>/s, July 17, 1973; no flow for long periods in each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC | JAN  | FEB  | MAR | APR | MAY | JUN | JUL   | AUG  | SEP |
|-------------|-------|--------|-----|------|------|-----|-----|-----|-----|-------|------|-----|
| 1           | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 2           | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 3           | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 4           | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 5           | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 6           | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 7           | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 8           | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 9           | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 10          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 11          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 12          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 13          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 14          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 15          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 16          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 17          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 18          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 19          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 20          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 21          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 22          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 23          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 24          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 25          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 26          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 27          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 28          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 29          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 30          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| 31          | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| TOTAL       | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| MEAN        | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| MAX         | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| MIN         | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| AC-FT       | .00   | .00    | .00 | .00  | .00  | .00 | .00 |     |     |       |      |     |
| CAL YR 1986 | TOTAL | 621.40 |     | MEAN | 1.70 | MAX | 15  | MIN | .00 | AC-FT | 1230 |     |

## 06430500 REDWATER CREEK AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34'26", long 104°02'54", in NW1/4 NW1/4 sec.18 T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203, on left bank 800 ft downstream from State line, 5.7 mi upstream from Crow Creek, and 12 mi southwest of Belle Fourche, SD.

DRAINAGE AREA.--471 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1929 to September 1931 and February 1936 to July 1937 (published as "near Beulah, WY"), June 1954 to current year.

REVISED RECORDS.--WSP 1309: 1931(M), 1936-37(M).

GAGE.--Water-stage recorder. Elevation of gage is 3,410 ft above National Geodetic Vertical Datum of 1929, from topographic map. Apr. 25, 1929, to Sept. 30, 1931, and Feb. 28, 1936, to July 31, 1937, nonrecording gage at site 2 mi upstream at different datum.

REMARKS.--Records good except for periods of estimated record, which are fair. Estimated daily discharges during water year: Nov. 10-14, Dec. 10-11, Jan. 16, and Feb. 26 to Mar. 4. Large diversions for irrigation upstream from station. Total flow passing State line may be obtained by adding flow of Murray ditch (see stations 06429997 and 06430000).

AVERAGE DISCHARGE.--35 years, 35.4 ft<sup>3</sup>/s, 25,650 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,440 ft<sup>3</sup>/s, Aug. 22, 1973, gage height, 12.19 ft, from rating curve extended above 1,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 11.95 ft; no flow Aug. 13-15, 1929.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| Mar. 7 | 0415 | *400                           | *5.42            | No other peak greater than base discharge. |      |                                |                  |

Minimum daily discharge, 8.3 ft<sup>3</sup>/s, July 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN   | JUL   | AUG   | SEP  |
|-------------|-------|---------|------|------|------|------|------|------|-------|-------|-------|------|
| 1           | 32    | 33      | 32   | 31   | 32   | 32   | 32   | 35   | 43    | 9.9   | 20    | 27   |
| 2           | 34    | 33      | 32   | 31   | 32   | 32   | 32   | 49   | 41    | 9.7   | 23    | 27   |
| 3           | 35    | 33      | 32   | 31   | 32   | 32   | 32   | 62   | 41    | 10    | 28    | 28   |
| 4           | 32    | 33      | 32   | 31   | 32   | 32   | 33   | 53   | 41    | 8.3   | 26    | 29   |
| 5           | 32    | 33      | 32   | 31   | 32   | 37   | 33   | 46   | 39    | 9.0   | 25    | 35   |
| 6           | 32    | 34      | 32   | 31   | 32   | 141  | 45   | 44   | 35    | 9.7   | 24    | 32   |
| 7           | 32    | 36      | 33   | 31   | 32   | 205  | 55   | 42   | 41    | 19    | 26    | 32   |
| 8           | 31    | 33      | 33   | 32   | 32   | 63   | 51   | 41   | 41    | 30    | 27    | 32   |
| 9           | 31    | 32      | 33   | 32   | 32   | 43   | 52   | 35   | 43    | 30    | 26    | 32   |
| 10          | 30    | 32      | 33   | 32   | 32   | 38   | 53   | 33   | 38    | 26    | 24    | 35   |
| 11          | 31    | 31      | 32   | 32   | 32   | 33   | 47   | 31   | 36    | 24    | 27    | 38   |
| 12          | 30    | 30      | 32   | 32   | 32   | 31   | 47   | 31   | 36    | 24    | 28    | 38   |
| 13          | 30    | 30      | 32   | 32   | 32   | 30   | 44   | 34   | 30    | 23    | 26    | 38   |
| 14          | 34    | 31      | 32   | 32   | 34   | 31   | 42   | 34   | 29    | 27    | 26    | 38   |
| 15          | 35    | 32      | 33   | 32   | 35   | 30   | 35   | 32   | 31    | 26    | 26    | 37   |
| 16          | 34    | 32      | 33   | 32   | 34   | 31   | 38   | 32   | 30    | 19    | 28    | 38   |
| 17          | 32    | 32      | 32   | 32   | 33   | 35   | 43   | 36   | 30    | 23    | 27    | 38   |
| 18          | 32    | 31      | 32   | 32   | 33   | 35   | 44   | 41   | 35    | 23    | 27    | 38   |
| 19          | 35    | 32      | 32   | 32   | 33   | 35   | 46   | 40   | 36    | 28    | 26    | 37   |
| 20          | 36    | 32      | 32   | 32   | 33   | 32   | 46   | 40   | 38    | 19    | 26    | 37   |
| 21          | 37    | 32      | 32   | 32   | 33   | 34   | 46   | 38   | 38    | 18    | 26    | 37   |
| 22          | 37    | 32      | 32   | 32   | 33   | 32   | 44   | 46   | 35    | 18    | 25    | 37   |
| 23          | 38    | 30      | 32   | 32   | 32   | 32   | 44   | 44   | 34    | 16    | 25    | 35   |
| 24          | 37    | 31      | 32   | 32   | 32   | 32   | 41   | 44   | 27    | 20    | 25    | 35   |
| 25          | 37    | 31      | 32   | 32   | 33   | 32   | 33   | 44   | 23    | 20    | 25    | 35   |
| 26          | 38    | 32      | 32   | 32   | 32   | 32   | 32   | 44   | 15    | 20    | 27    | 35   |
| 27          | 38    | 32      | 33   | 32   | 32   | 32   | 32   | 43   | 12    | 18    | 28    | 35   |
| 28          | 38    | 32      | 33   | 32   | 32   | 32   | 33   | 55   | 9.0   | 20    | 27    | 35   |
| 29          | 33    | 32      | 32   | 32   | ---  | 32   | 34   | 49   | 9.2   | 21    | 27    | 35   |
| 30          | 32    | 32      | 32   | 32   | ---  | 32   | 33   | 45   | 10    | 20    | 27    | 35   |
| 31          | 33    | ---     | 32   | 32   | ---  | 32   | ---  | 43   | ---   | 23    | 27    | ---  |
| TOTAL       | 1048  | 961     | 1000 | 985  | 910  | 1332 | 1222 | 1286 | 946.2 | 611.6 | 805   | 1040 |
| MEAN        | 33.8  | 32.0    | 32.3 | 31.8 | 32.5 | 43.0 | 40.7 | 41.5 | 31.5  | 19.7  | 26.0  | 34.7 |
| MAX         | 38    | 36      | 33   | 32   | 35   | 205  | 55   | 62   | 43    | 30    | 28    | 38   |
| MIN         | 30    | 30      | 32   | 31   | 32   | 30   | 32   | 31   | 9.0   | 8.3   | 20    | 27   |
| AC-FT       | 2080  | 1910    | 1980 | 1950 | 1800 | 2640 | 2420 | 2550 | 1880  | 1210  | 1600  | 2060 |
| CAL YR 1986 | TOTAL | 11238   |      | MEAN | 30.8 | MAX  | 108  | MIN  | 13    | AC-FT | 22290 |      |
| WTR YR 1987 | TOTAL | 12146.8 |      | MEAN | 33.3 | MAX  | 205  | MIN  | 8.3   | AC-FT | 24090 |      |

## 06454000 NIOBRARA RIVER AT WYOMING-NEBRASKA STATE LINE

LOCATION.--Lat 42°39'33", long 104°03'54", in SE1/4 SW1/4 sec.15, T.31 N., R.60 W., Niobrara County, Wyoming, Hydrologic Unit 10150002, on left bank 0.2 mi downstream from Van Tassel Creek, 0.3 mi upstream from Wyoming-Nebraska State line, and 3 mi east of Van Tassel, WY.

DRAINAGE AREA.--450 mi<sup>2</sup>, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 4,687.70 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 25 to Jan. 21 and Feb. 3. Records fair. Diversions for irrigation of about 4,700 acres upstream from station.

AVERAGE DISCHARGE.--32 years, 3.79 ft<sup>3</sup>/s, 2,750 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,120 ft<sup>3</sup>/s, Aug. 16, 1977, gage height, 8.28 ft in gage well, from rating curve extended above 800 ft<sup>3</sup>/s on basis of computation of peak flow from slope-area measurement; minimum daily, 0.54 ft<sup>3</sup>/s, Aug. 9, 10, 12, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Mar. 25 | 0930 | *80                               | *3.28               | June 19 | 0315 | 29                                | 3.15                |

Minimum daily discharge, 1.1 ft<sup>3</sup>/s, Aug. 17, 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN  | FEB  | MAR   | APR   | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|-------|-------|-------|------|------|-------|-------|-------|-------|------|------|------|
| 1     | 3.4   | 3.7   | 3.7   | 3.0  | 1.9  | 2.5   | 6.5   | 4.4   | 3.9   | 3.4  | 1.6  | 1.3  |
| 2     | 3.8   | 3.8   | 3.7   | 3.0  | 1.9  | 2.6   | 5.8   | 4.2   | 3.5   | 3.2  | 1.6  | 1.4  |
| 3     | 4.4   | 3.8   | 3.7   | 2.9  | 1.9  | 2.7   | 6.0   | 3.7   | 3.2   | 3.2  | 1.5  | 1.4  |
| 4     | 4.0   | 3.8   | 3.5   | 2.9  | 1.9  | 2.6   | 5.8   | 3.7   | 3.1   | 3.2  | 1.5  | 1.5  |
| 5     | 4.0   | 3.8   | 3.5   | 2.9  | 1.9  | 2.6   | 5.8   | 3.5   | 3.0   | 3.0  | 1.5  | 1.7  |
| 6     | 4.0   | 3.8   | 3.5   | 2.8  | 2.0  | 2.9   | 5.4   | 3.7   | 2.8   | 3.0  | 1.5  | 1.6  |
| 7     | 3.8   | 3.8   | 3.5   | 2.8  | 2.7  | 2.6   | 5.6   | 3.5   | 2.7   | 2.9  | 1.8  | 1.7  |
| 8     | 3.8   | 3.8   | 3.5   | 2.8  | 3.1  | 2.4   | 5.4   | 3.5   | 4.5   | 2.9  | 1.9  | 1.8  |
| 9     | 3.7   | 3.8   | 3.5   | 2.8  | 2.9  | 1.9   | 5.6   | 3.5   | 4.6   | 2.7  | 1.7  | 1.8  |
| 10    | 3.7   | 3.8   | 3.4   | 2.7  | 2.9  | 1.8   | 4.6   | 3.5   | 5.3   | 2.7  | 1.5  | 1.9  |
| 11    | 3.8   | 3.7   | 3.4   | 2.7  | 3.7  | 2.1   | 4.4   | 3.5   | 3.6   | 2.6  | 1.3  | 1.9  |
| 12    | 3.8   | 3.7   | 3.4   | 2.7  | 3.6  | 2.7   | 4.8   | 2.9   | 3.1   | 2.6  | 1.4  | 2.0  |
| 13    | 4.0   | 3.7   | 3.4   | 2.6  | 3.8  | 6.7   | 5.6   | 2.7   | 3.1   | 2.4  | 1.3  | 2.0  |
| 14    | 4.0   | 3.7   | 3.4   | 2.6  | 4.2  | 6.7   | 5.3   | 2.7   | 3.0   | 2.5  | 1.3  | 2.0  |
| 15    | 3.8   | 3.7   | 3.4   | 2.6  | 4.0  | 6.9   | 5.0   | 2.9   | 2.7   | 2.4  | 1.2  | 2.0  |
| 16    | 5.0   | 3.8   | 3.4   | 2.5  | 4.0  | 7.2   | 4.8   | 3.5   | 2.2   | 2.2  | 1.2  | 2.0  |
| 17    | 4.0   | 3.8   | 3.4   | 2.5  | 3.9  | 6.8   | 4.6   | 5.6   | 2.1   | 2.1  | 1.1  | 2.0  |
| 18    | 4.0   | 3.8   | 3.2   | 2.5  | 3.6  | 6.4   | 4.6   | 5.2   | 2.7   | 1.9  | 1.2  | 2.1  |
| 19    | 3.8   | 4.0   | 3.2   | 2.4  | 3.4  | 7.6   | 4.6   | 4.2   | 16    | 2.0  | 1.2  | 2.2  |
| 20    | 4.6   | 4.0   | 3.2   | 2.4  | 3.4  | 7.7   | 4.4   | 4.6   | 11    | 1.8  | 1.1  | 2.2  |
| 21    | 4.6   | 4.0   | 3.2   | 2.3  | 3.2  | 4.8   | 4.8   | 4.8   | 5.1   | 1.8  | 1.1  | 2.3  |
| 22    | 4.4   | 4.0   | 3.2   | 2.3  | 3.2  | 6.7   | 5.0   | 4.4   | 3.8   | 1.8  | 1.4  | 2.4  |
| 23    | 6.5   | 3.8   | 3.2   | 1.9  | 3.0  | 6.5   | 5.0   | 4.4   | 3.9   | 1.8  | 1.4  | 2.4  |
| 24    | 4.6   | 4.0   | 3.2   | 1.6  | 2.7  | 5.2   | 4.8   | 4.4   | 3.8   | 1.8  | 1.4  | 2.4  |
| 25    | 4.4   | 3.9   | 3.2   | 1.6  | 2.6  | 32    | 4.8   | 4.6   | 3.7   | 1.7  | 1.4  | 2.4  |
| 26    | 3.7   | 3.8   | 3.2   | 1.7  | 2.6  | 6.0   | 4.8   | 5.0   | 3.7   | 1.7  | 1.3  | 2.4  |
| 27    | 3.7   | 3.8   | 3.1   | 1.7  | 2.7  | 9.8   | 4.8   | 4.9   | 3.7   | 1.7  | 1.3  | 2.4  |
| 28    | 3.8   | 3.7   | 3.1   | 1.8  | 2.6  | 5.8   | 4.8   | 3.6   | 3.5   | 1.7  | 1.3  | 2.4  |
| 29    | 3.8   | 3.7   | 3.1   | 1.8  | ---  | 5.6   | 4.8   | 3.3   | 3.5   | 1.7  | 1.2  | 2.3  |
| 30    | 8.6   | 3.7   | 3.0   | 1.9  | ---  | 5.8   | 4.6   | 4.8   | 3.4   | 1.6  | 1.2  | 2.4  |
| 31    | 3.8   | ---   | 3.0   | 1.8  | ---  | 6.5   | ---   | 4.4   | ---   | 1.6  | 1.3  | ---  |
| TOTAL | 131.3 | 114.2 | 103.4 | 74.5 | 83.3 | 180.1 | 152.8 | 123.6 | 124.2 | 71.6 | 42.7 | 60.3 |
| MEAN  | 4.24  | 3.81  | 3.34  | 2.40 | 2.97 | 5.81  | 5.09  | 3.99  | 4.14  | 2.31 | 1.38 | 2.01 |
| MAX   | 8.6   | 4.0   | 3.7   | 3.0  | 4.2  | 32    | 6.5   | 5.6   | 16    | 3.4  | 1.9  | 2.4  |
| MIN   | 3.4   | 3.7   | 3.0   | 1.6  | 1.9  | 1.8   | 4.4   | 2.7   | 2.1   | 1.6  | 1.1  | 1.3  |
| AC-FT | 260   | 227   | 205   | 148  | 165  | 357   | 303   | 245   | 246   | 142  | 85   | 120  |

CAL YR 1986 TOTAL 1419.9 MEAN 3.89 MAX 20 MIN 1.2 AC-FT 2820  
WTR YR 1987 TOTAL 1262.0 MEAN 3.46 MAX 32 MIN 1.1 AC-FT 2500

## 06620000 NORTH PLATTE RIVER NEAR NORTHGATE, CO

LOCATION.--Lat 40°56'15", long 106°20'16", in NE1/4 SW1/4 SE1/4 sec.11, T.11 N., R.80 W., Jackson County, Hydrologic Unit 10180001, on right bank 1,000 ft downstream from bridge on State Highway 125, 0.7 mi upstream from Camp Creek, 4.2 mi northwest of Northgate, and 4.4 mi south of Colorado-Wyoming State line.

DRAINAGE AREA.--1,431 mi<sup>2</sup>.

PERIOD OF RECORD.--May to November 1904 (published as "near Pinkhampton"), May 1915 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1916-21, 1929(M), 1930-32. WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7,810.39 ft above National Geodetic Vertical Datum of 1929. See WSP 1730 for history of changes prior to Apr. 8, 1918. Apr. 8, 1918, to Aug. 21, 1961, water-stage recorder at site 0.7 mi downstream at datum 3.36 ft lower. Aug. 22, 1961, to Sept. 18, 1984, at site 650 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 7, 10-16, Dec. 1-4, 10-31, Jan. 1 to Apr. 11, and May 16, 17, 26. Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 130,000 acres of hay meadows upstream from station. Transbasin diversions upstream from station to Cache la Poudre River basin.

AVERAGE DISCHARGE.--72 years, 445 ft<sup>3</sup>/s, 322,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,720 ft<sup>3</sup>/s, June 11, 1923, gage height, 6.24 ft, site and datum then in use; maximum gage height recorded, 9.65 ft, Apr. 25, 1980, ice jam; minimum daily discharge, 19 ft<sup>3</sup>/s, July 17-19, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,120 ft<sup>3</sup>/s, June 10, gage height, 3.94 ft; maximum gage height, 4.78 ft, Apr. 9, backwater from ice jam; minimum daily discharge, 52 ft<sup>3</sup>/s, Sept. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|--------|-------|------|------|------|-------|-------|-------|-------|--------|------|
| 1           | 293   | 301    | 210   | 101  | 85   | 107  | 150   | 947   | 403   | 410   | 300    | 99   |
| 2           | 284   | 326    | 230   | 97   | 87   | 115  | 158   | 971   | 355   | 366   | 254    | 84   |
| 3           | 322   | 342    | 248   | 93   | 91   | 121  | 175   | 871   | 336   | 340   | 217    | 72   |
| 4           | 384   | 321    | 265   | 97   | 93   | 128  | 195   | 736   | 342   | 284   | 186    | 70   |
| 5           | 379   | 306    | 285   | 99   | 91   | 136  | 233   | 598   | 347   | 270   | 162    | 75   |
| 6           | 343   | 296    | 303   | 95   | 90   | 143  | 290   | 502   | 397   | 247   | 144    | 80   |
| 7           | 316   | 280    | 250   | 87   | 95   | 150  | 370   | 426   | 440   | 225   | 132    | 81   |
| 8           | 285   | 240    | 279   | 82   | 100  | 158  | 485   | 389   | 554   | 193   | 149    | 75   |
| 9           | 281   | 121    | 177   | 78   | 104  | 162  | 556   | 357   | 887   | 173   | 169    | 68   |
| 10          | 275   | 188    | 142   | 77   | 109  | 167  | 550   | 355   | 1090  | 145   | 156    | 61   |
| 11          | 284   | 200    | 110   | 81   | 113  | 173  | 540   | 389   | 1040  | 142   | 138    | 57   |
| 12          | 277   | 170    | 120   | 84   | 117  | 178  | 521   | 423   | 909   | 185   | 130    | 59   |
| 13          | 281   | 194    | 130   | 85   | 120  | 183  | 492   | 448   | 821   | 381   | 120    | 54   |
| 14          | 282   | 230    | 140   | 82   | 123  | 193  | 463   | 485   | 743   | 416   | 116    | 52   |
| 15          | 280   | 256    | 153   | 79   | 119  | 203  | 468   | 485   | 719   | 339   | 116    | 54   |
| 16          | 265   | 287    | 159   | 75   | 116  | 198  | 620   | 520   | 682   | 278   | 124    | 68   |
| 17          | 254   | 316    | 164   | 69   | 114  | 193  | 842   | 600   | 597   | 255   | 121    | 81   |
| 18          | 234   | 368    | 159   | 66   | 113  | 188  | 938   | 726   | 550   | 247   | 102    | 89   |
| 19          | 229   | 421    | 151   | 67   | 113  | 182  | 1010  | 932   | 511   | 256   | 87     | 87   |
| 20          | 234   | 509    | 142   | 65   | 112  | 180  | 1040  | 780   | 462   | 223   | 77     | 79   |
| 21          | 245   | 506    | 134   | 63   | 109  | 176  | 896   | 891   | 432   | 199   | 78     | 71   |
| 22          | 271   | 454    | 131   | 64   | 110  | 170  | 710   | 884   | 392   | 203   | 85     | 64   |
| 23          | 294   | 408    | 127   | 65   | 109  | 167  | 709   | 884   | 380   | 191   | 100    | 66   |
| 24          | 325   | 387    | 119   | 66   | 107  | 161  | 857   | 924   | 353   | 191   | 112    | 61   |
| 25          | 325   | 365    | 114   | 68   | 106  | 157  | 1000  | 908   | 322   | 164   | 153    | 59   |
| 26          | 315   | 344    | 111   | 70   | 106  | 152  | 974   | 870   | 312   | 164   | 156    | 57   |
| 27          | 299   | 312    | 112   | 73   | 104  | 157  | 951   | 788   | 283   | 183   | 156    | 57   |
| 28          | 297   | 325    | 113   | 77   | 103  | 150  | 948   | 705   | 273   | 214   | 142    | 57   |
| 29          | 295   | 318    | 112   | 81   | ---  | 143  | 939   | 622   | 288   | 238   | 131    | 57   |
| 30          | 287   | 206    | 107   | 84   | ---  | 137  | 980   | 549   | 364   | 246   | 124    | 54   |
| 31          | 286   | ---    | 104   | 86   | ---  | 140  | ---   | 477   | ---   | 288   | 111    | ---  |
| TOTAL       | 9021  | 9297   | 5101  | 2456 | 2959 | 4968 | 19060 | 20442 | 15584 | 7656  | 4348   | 2048 |
| MEAN        | 291   | 310    | 165   | 79.2 | 106  | 160  | 635   | 659   | 519   | 247   | 140    | 68.3 |
| MAX         | 384   | 509    | 303   | 101  | 123  | 203  | 1040  | 971   | 1090  | 416   | 300    | 99   |
| MIN         | 229   | 121    | 104   | 63   | 85   | 107  | 150   | 355   | 273   | 142   | 77     | 52   |
| AC-FT       | 17890 | 18440  | 10120 | 4870 | 5870 | 9850 | 37810 | 40550 | 30910 | 15190 | 8620   | 4060 |
| CAL YR 1986 | TOTAL | 302425 |       | MEAN | 829  | MAX  | 4620  | MIN   | 104   | AC-FT | 599900 |      |
| WTR YR 1987 | TOTAL | 102940 |       | MEAN | 282  | MAX  | 1090  | MIN   | 52    | AC-FT | 204200 |      |

06622700 NORTH BRUSH CREEK NEAR SARATOGA, WY

LOCATION.--Lat 41°22'13", long 106°31'12", in NW1/4 SW1/4 NE1/4 sec.8, T.16 N., R.81 W., Carbon County, Hydrologic Unit 10180002, Medicine Bow National Forest, on right bank 0.2 mi upstream from bridge on logging road, 0.5 mi downstream from Lincoln Creek, 1.6 mi upstream from South Brush Creek, and 16 mi southeast of Saratoga.

DRAINAGE AREA.--37.4 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Elevation of gage is 8,020 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 17, 1971, at site 0.22 mi downstream at different datum. June 17, 1971, to Aug. 2, 1984, at site 0.2 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 2-5, 7-16, 20, 23, 24, 26, 27, 30, Dec. 1 to Jan. 26, and Apr. 13, 14. Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

AVERAGE DISCHARGE.--27 years, 51.5 ft<sup>3</sup>/s, 37,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,360 ft<sup>3</sup>/s, June 25, 1983, gage height, 4.23 ft, site and datum then in use; minimum daily, 4.7 ft<sup>3</sup>/s, Oct. 27-29, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft<sup>3</sup>/s and maximum (\*):

| Date                                                           | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                       | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|----------------------------------------------------------------|------|-----------------------------------|---------------------|--------------------------------------------|------|-----------------------------------|---------------------|
| May 12                                                         | 0030 | *481                              | *3.53               | No other peak greater than base discharge. |      |                                   |                     |
| Minimum daily discharge, 6.8 ft <sup>3</sup> /s, Sept. 28, 29. |      |                                   |                     |                                            |      |                                   |                     |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR   | APR    | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|---------|-------|-------|-------|-------|--------|------|------|-------|-------|-------|
| 1           | 18    | 16      | 10    | 9.7   | 10    | 8.8   | 9.6    | 145  | 92   | 33    | 16    | 8.3   |
| 2           | 21    | 15      | 11    | 11    | 10    | 9.0   | 9.5    | 134  | 81   | 33    | 12    | 8.1   |
| 3           | 24    | 16      | 12    | 10    | 10    | 8.9   | 9.9    | 95   | 76   | 22    | 11    | 7.9   |
| 4           | 20    | 17      | 11    | 11    | 10    | 8.8   | 11     | 78   | 76   | 19    | 9.6   | 10    |
| 5           | 19    | 18      | 12    | 12    | 9.9   | 9.4   | 11     | 97   | 75   | 18    | 9.3   | 12    |
| 6           | 19    | 17      | 13    | 11    | 9.7   | 10    | 11     | 143  | 73   | 16    | 11    | 9.4   |
| 7           | 21    | 16      | 12    | 10    | 9.7   | 11    | 13     | 168  | 104  | 15    | 21    | 8.5   |
| 8           | 24    | 15      | 11    | 9.7   | 9.8   | 10    | 14     | 175  | 160  | 14    | 29    | 8.3   |
| 9           | 23    | 14      | 10    | 9.2   | 9.8   | 10    | 13     | 181  | 140  | 14    | 15    | 8.1   |
| 10          | 22    | 11      | 9.2   | 9.6   | 9.8   | 10    | 13     | 192  | 98   | 14    | 12    | 7.6   |
| 11          | 19    | 12      | 9.5   | 10    | 10    | 9.7   | 12     | 213  | 76   | 18    | 11    | 7.6   |
| 12          | 18    | 12      | 10    | 10    | 9.8   | 9.9   | 11     | 331  | 65   | 32    | 11    | 7.6   |
| 13          | 20    | 13      | 10    | 11    | 10    | 9.9   | 10     | 242  | 57   | 25    | 9.9   | 7.3   |
| 14          | 16    | 15      | 11    | 11    | 10    | 9.6   | 13     | 223  | 50   | 17    | 10    | 7.4   |
| 15          | 15    | 17      | 11    | 9.9   | 9.9   | 10    | 17     | 204  | 46   | 15    | 11    | 9.1   |
| 16          | 15    | 18      | 11    | 9.3   | 9.8   | 10    | 23     | 223  | 52   | 13    | 19    | 9.3   |
| 17          | 14    | 16      | 10    | 9.5   | 9.9   | 10    | 29     | 249  | 39   | 21    | 12    | 8.5   |
| 18          | 15    | 14      | 9.7   | 9.8   | 9.6   | 9.8   | 37     | 214  | 35   | 35    | 9.8   | 8.2   |
| 19          | 15    | 15      | 10    | 10    | 9.3   | 9.8   | 42     | 176  | 30   | 17    | 9.2   | 7.8   |
| 20          | 17    | 14      | 11    | 9.6   | 9.4   | 9.3   | 34     | 167  | 29   | 14    | 8.9   | 7.8   |
| 21          | 16    | 14      | 11    | 9.6   | 9.0   | 9.7   | 35     | 173  | 28   | 13    | 9.1   | 7.6   |
| 22          | 18    | 13      | 11    | 9.7   | 9.1   | 9.6   | 38     | 129  | 25   | 13    | 15    | 7.5   |
| 23          | 18    | 12      | 11    | 10    | 9.2   | 9.3   | 47     | 115  | 23   | 13    | 14    | 7.4   |
| 24          | 20    | 14      | 11    | 10    | 9.2   | 9.2   | 62     | 119  | 22   | 11    | 15    | 6.9   |
| 25          | 18    | 13      | 11    | 11    | 9.2   | 9.2   | 68     | 115  | 29   | 10    | 17    | 7.0   |
| 26          | 17    | 12      | 10    | 11    | 9.2   | 9.2   | 75     | 103  | 29   | 11    | 13    | 7.0   |
| 27          | 17    | 13      | 11    | 11    | 9.2   | 9.2   | 84     | 96   | 27   | 13    | 11    | 6.9   |
| 28          | 18    | 14      | 11    | 11    | 8.9   | 9.2   | 101    | 86   | 26   | 16    | 10    | 6.8   |
| 29          | 16    | 13      | 11    | 11    | ---   | 9.1   | 113    | 81   | 30   | 21    | 9.6   | 6.8   |
| 30          | 17    | 12      | 11    | 10    | ---   | 8.9   | 128    | 88   | 30   | 15    | 9.0   | 7.0   |
| 31          | 18    | ---     | 10    | 10    | ---   | 9.2   | ---    | 87   | ---  | 18    | 8.5   | ---   |
| TOTAL       | 568   | 431     | 333.4 | 317.6 | 269.4 | 295.7 | 1094.0 | 4842 | 1723 | 559   | 388.9 | 239.7 |
| MEAN        | 18.3  | 14.4    | 10.8  | 10.2  | 9.62  | 9.54  | 36.5   | 156  | 57.4 | 18.0  | 12.5  | 7.99  |
| MAX         | 24    | 18      | 13    | 12    | 10    | 11    | 128    | 331  | 160  | 35    | 29    | 12    |
| MIN         | 14    | 11      | 9.2   | 9.2   | 8.9   | 8.8   | 9.5    | 78   | 22   | 10    | 8.5   | 6.8   |
| AC-FT       | 1130  | 855     | 661   | 630   | 534   | 587   | 2170   | 9600 | 3420 | 1110  | 771   | 475   |
| CAL YR 1986 | TOTAL | 22866.3 |       | MEAN  | 62.6  | MAX   | 754    | MIN  | 8.8  | AC-FT | 45360 |       |
| WTR YR 1987 | TOTAL | 11061.7 |       | MEAN  | 30.3  | MAX   | 331    | MIN  | 6.8  | AC-FT | 21940 |       |



## PLATTE RIVER BASIN

06622900 SOUTH BRUSH CREEK NEAR SARATOGA, WY

LOCATION.--Lat 41°20'38", long 106°31'33", in NE1/4 NW1/4 sec.20, T.16 N., R.81 W., Carbon County, Hydrologic Unit 10180002, Medicine Bow National Forest, on left bank 300 ft upstream from culvert on State Highway 130, 1.6 mi upstream from North Brush Creek, and 17 mi southeast of Saratoga.

DRAINAGE AREA.--22.8 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1960 to September 1974, May 1976 to September 1977, May 1979 to current year (no winter records since 1972).

GAGE.--Water-stage recorder. Elevation of gage is 8,100 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Transbasin diversion 0.3 mi upstream from station for irrigation in North Brush Creek basin.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--12 years (water years 1961-72), 31.8 ft<sup>3</sup>/s, 23,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 559 ft<sup>3</sup>/s, June 10, 1965, gage height, 4.09 ft; minimum daily, 0.80 ft<sup>3</sup>/s, Aug. 15-20, 28, 29, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 225 ft<sup>3</sup>/s, May 16, gage height, 3.19 ft; minimum daily during period of operation, 1.8 ft<sup>3</sup>/s, Sept. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY    | JUN   | JUL   | AUG   | SEP   |
|-------|-----|-----|-----|-----|-----|-----|-----|--------|-------|-------|-------|-------|
| 1     |     |     |     |     |     |     | --- | 86     | 16    | 23    | 8.0   | 2.3   |
| 2     |     |     |     |     |     |     | --- | 76     | 15    | 23    | 5.9   | 2.2   |
| 3     |     |     |     |     |     |     | --- | 58     | 13    | 17    | 4.6   | 2.1   |
| 4     |     |     |     |     |     |     | --- | 49     | 16    | 17    | 5.3   | 2.1   |
| 5     |     |     |     |     |     |     | --- | 56     | 18    | 16    | 5.3   | 2.2   |
| 6     |     |     |     |     |     |     | --- | 73     | 16    | 14    | 5.0   | 2.0   |
| 7     |     |     |     |     |     |     | --- | 88     | 38    | 13    | 6.3   | 1.8   |
| 8     |     |     |     |     |     |     | --- | 94     | 65    | 12    | 6.6   | 2.1   |
| 9     |     |     |     |     |     |     | --- | 103    | 57    | 12    | 4.8   | 2.1   |
| 10    |     |     |     |     |     |     | --- | 108    | 34    | 11    | 4.6   | 2.5   |
| 11    |     |     |     |     |     |     | --- | 93     | 19    | 13    | 4.5   | 5.1   |
| 12    |     |     |     |     |     |     | --- | 101    | 12    | 26    | 4.3   | 5.9   |
| 13    |     |     |     |     |     |     | --- | 84     | 9.9   | 15    | 4.2   | 6.1   |
| 14    |     |     |     |     |     |     | --- | 55     | 8.0   | 5.0   | 4.0   | 6.4   |
| 15    |     |     |     |     |     |     | --- | 57     | 6.8   | 4.6   | 3.9   | 7.2   |
| 16    |     |     |     |     |     |     | --- | 87     | 6.8   | 4.5   | 4.5   | 7.7   |
| 17    |     |     |     |     |     |     | --- | 120    | 5.1   | 9.5   | 3.4   | 7.4   |
| 18    |     |     |     |     |     |     | --- | 82     | 11    | 9.7   | 3.1   | 7.2   |
| 19    |     |     |     |     |     |     | --- | 66     | 21    | 4.8   | 3.0   | 7.0   |
| 20    |     |     |     |     |     |     | --- | 56     | 23    | 4.5   | 2.9   | 6.8   |
| 21    |     |     |     |     |     |     | --- | 55     | 21    | 4.3   | 2.8   | 6.4   |
| 22    |     |     |     |     |     |     | --- | 34     | 21    | 4.2   | 3.9   | 6.1   |
| 23    |     |     |     |     |     |     | --- | 27     | 28    | 3.7   | 3.1   | 5.5   |
| 24    |     |     |     |     |     |     | --- | 26     | 25    | 3.6   | 3.0   | 5.5   |
| 25    |     |     |     |     |     |     | --- | 23     | 22    | 3.6   | 3.3   | 5.1   |
| 26    |     |     |     |     |     |     | --- | 20     | 20    | 3.7   | 3.3   | 5.1   |
| 27    |     |     |     |     |     |     | --- | 66     | 13    | 18    | 4.2   | 5.1   |
| 28    |     |     |     |     |     |     | --- | 74     | 11    | 18    | 7.1   | 5.1   |
| 29    |     |     |     |     |     |     | --- | 79     | 9.9   | 20    | 9.2   | 5.1   |
| 30    |     |     |     |     |     |     | --- | 75     | 10    | 22    | 6.6   | 5.1   |
| 31    |     |     |     |     |     |     | --- | 13     | ---   | 10    | 2.5   | ---   |
| TOTAL |     |     |     |     |     |     | --- | 1833.9 | 625.6 | 314.8 | 126.8 | 142.3 |
| MEAN  |     |     |     |     |     |     | --- | 59.2   | 20.9  | 10.2  | 4.09  | 4.74  |
| MAX   |     |     |     |     |     |     | --- | 120    | 65    | 26    | 8.0   | 7.7   |
| MIN   |     |     |     |     |     |     | --- | 9.9    | 5.1   | 3.6   | 2.4   | 1.8   |
| AC-FT |     |     |     |     |     |     | --- | 3640   | 1240  | 624   | 252   | 282   |

06623800 ENCAMPMENT RIVER ABOVE HOG PARK CREEK, NEAR ENCAMPMENT, WY  
(Hydrologic bench-mark station)

LOCATION.--Lat 41°01'25", long 106°49'27", in NE1/4 SW1/4 sec.10, T.12 N., R.84 W., Carbon County, Hydrologic Unit 10180002, Medicine Bow National Forest, on left bank 0.6 mi upstream from Hog Park Creek and 13 mi south of Encampment.

DRAINAGE AREA.--72.7 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 8,270 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 11-13, 20-25, 27-31, Nov. 1-28, 30, Dec. 1-3, 9-15, Dec. 18 to Feb. 2, Feb. 7, 8, 19-28, Mar. 1-24, 26-31, and Apr. 1-24. Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

AVERAGE DISCHARGE.--23 years, 117 ft<sup>3</sup>/s, 84,770 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,680 ft<sup>3</sup>/s, about June 13, 1965 (gage height not determined), from slope-area measurement of peak flow; minimum daily, 9.5 ft<sup>3</sup>/s, Dec. 31, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                 | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|--------------------------------------|------|-----------------------------------|---------------------|
| May 16 | 2230 | *548                              | *3.47               | No peak greater than base discharge. |      |                                   |                     |

Minimum daily discharge, 16 ft<sup>3</sup>/s, Sept. 28-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|-------|------|------|------|------|------|-------|-------|-------|--------|------|
| 1           | 52    | 33    | 28   | 25   | 21   | 19   | 21   | 238   | 246   | 83    | 37     | 21   |
| 2           | 61    | 33    | 29   | 25   | 20   | 20   | 22   | 218   | 231   | 70    | 31     | 20   |
| 3           | 66    | 34    | 30   | 26   | 21   | 20   | 23   | 158   | 223   | 65    | 28     | 20   |
| 4           | 59    | 34    | 32   | 26   | 21   | 21   | 25   | 138   | 228   | 62    | 27     | 22   |
| 5           | 54    | 34    | 34   | 25   | 20   | 22   | 25   | 153   | 241   | 61    | 26     | 22   |
| 6           | 53    | 35    | 34   | 25   | 20   | 22   | 24   | 191   | 246   | 56    | 26     | 21   |
| 7           | 59    | 33    | 33   | 26   | 20   | 22   | 25   | 223   | 303   | 53    | 28     | 20   |
| 8           | 61    | 31    | 31   | 25   | 20   | 21   | 27   | 241   | 375   | 51    | 32     | 20   |
| 9           | 59    | 27    | 29   | 25   | 20   | 21   | 29   | 272   | 337   | 48    | 27     | 19   |
| 10          | 56    | 23    | 28   | 24   | 20   | 20   | 28   | 303   | 290   | 46    | 24     | 18   |
| 11          | 46    | 25    | 29   | 24   | 20   | 20   | 26   | 313   | 255   | 58    | 24     | 18   |
| 12          | 38    | 27    | 30   | 24   | 20   | 20   | 26   | 330   | 236   | 90    | 24     | 18   |
| 13          | 41    | 29    | 31   | 23   | 20   | 21   | 25   | 363   | 221   | 70    | 24     | 17   |
| 14          | 43    | 31    | 31   | 23   | 20   | 21   | 26   | 386   | 204   | 53    | 25     | 17   |
| 15          | 42    | 33    | 30   | 23   | 20   | 20   | 29   | 403   | 188   | 47    | 27     | 21   |
| 16          | 41    | 34    | 31   | 23   | 20   | 20   | 38   | 458   | 176   | 43    | 37     | 21   |
| 17          | 41    | 34    | 31   | 22   | 19   | 20   | 48   | 468   | 155   | 43    | 27     | 20   |
| 18          | 42    | 35    | 30   | 22   | 19   | 20   | 64   | 450   | 140   | 45    | 23     | 19   |
| 19          | 43    | 35    | 29   | 21   | 18   | 20   | 76   | 424   | 128   | 40    | 22     | 18   |
| 20          | 42    | 34    | 28   | 21   | 19   | 20   | 62   | 403   | 121   | 37    | 21     | 18   |
| 21          | 39    | 34    | 27   | 21   | 19   | 19   | 50   | 382   | 115   | 37    | 23     | 17   |
| 22          | 38    | 33    | 27   | 21   | 19   | 19   | 60   | 327   | 107   | 41    | 29     | 17   |
| 23          | 38    | 32    | 26   | 21   | 20   | 19   | 80   | 319   | 101   | 34    | 31     | 17   |
| 24          | 39    | 32    | 26   | 21   | 20   | 20   | 103  | 313   | 94    | 32    | 42     | 17   |
| 25          | 40    | 32    | 25   | 20   | 19   | 21   | 124  | 303   | 88    | 32    | 39     | 17   |
| 26          | 41    | 30    | 26   | 21   | 19   | 21   | 132  | 278   | 83    | 41    | 37     | 17   |
| 27          | 39    | 32    | 26   | 21   | 19   | 21   | 143  | 249   | 80    | 53    | 28     | 17   |
| 28          | 37    | 33    | 26   | 20   | 19   | 20   | 183  | 238   | 74    | 52    | 26     | 16   |
| 29          | 36    | 34    | 26   | 21   | ---  | 19   | 204  | 228   | 75    | 42    | 25     | 16   |
| 30          | 35    | 31    | 26   | 21   | ---  | 20   | 209  | 225   | 78    | 36    | 22     | 16   |
| 31          | 34    | ---   | 25   | 21   | ---  | 20   | ---  | 233   | ---   | 41    | 22     | ---  |
| TOTAL       | 1415  | 957   | 894  | 707  | 552  | 629  | 1957 | 9228  | 5439  | 1562  | 864    | 557  |
| MEAN        | 45.6  | 31.9  | 28.8 | 22.8 | 19.7 | 20.3 | 65.2 | 298   | 181   | 50.4  | 27.9   | 18.6 |
| MAX         | 66    | 35    | 34   | 26   | 21   | 22   | 209  | 468   | 375   | 90    | 42     | 22   |
| MIN         | 34    | 23    | 25   | 20   | 18   | 19   | 21   | 138   | 74    | 32    | 21     | 16   |
| AC-FT       | 2810  | 1900  | 1770 | 1400 | 1090 | 1250 | 3880 | 18300 | 10790 | 3100  | 1710   | 1100 |
| CAL YR 1986 | TOTAL | 55335 |      | MEAN | 152  | MAX  | 1160 | MIN   | 21    | AC-FT | 109800 |      |
| WTR YR 1987 | TOTAL | 24761 |      | MEAN | 67.8 | MAX  | 468  | MIN   | 16    | AC-FT | 49110  |      |

## PLATTE RIVER BASIN

06623800 ENCAMPMENT RIVER ABOVE HOG PARK CREEK, NEAR ENCAMPMENT, WY--Continued  
(Hydrologic bench-mark station)

## WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TUR-<br>BID-<br>ITY<br>(NTU) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCHI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|----------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------|
| OCT<br>01... | 1330 | 50                                              | 60                                                | 8.1                            | 0.5                          | 5.0                                  | 556                                                  | 9.5                                 | 102                                          | 28                                                             | 24                                                                  |
| MAR<br>25... | 0900 | 24                                              | 68                                                | 7.2                            | 0.6                          | 0.0                                  | 556                                                  | 10.7                                | 101                                          | <1                                                             | <1                                                                  |
| MAY<br>28... | 1030 | 221                                             | 37                                                | 7.6                            | 1.2                          | 3.0                                  | 557                                                  | 10.0                                | 102                                          | K3                                                             | K1                                                                  |
| AUG<br>19... | 1130 | 22                                              | 66                                                | 8.0                            | 2.5                          | 12.5                                 | 564                                                  | 8.4                                 | 107                                          | K6                                                             | K2                                                                  |

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

| DATE         | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | ALKA-<br>LINITY,<br>CARBON-<br>ATE<br>IT-FLD<br>(MG/L<br>CACO3) | BICAR-<br>BONATE<br>WH WAT<br>TOTAL<br>FIELD<br>MG/L AS<br>HCO3 | CAR-<br>BONATE<br>WH WAT<br>TOTAL<br>FIELD<br>MG/L AS<br>CO3 |
|--------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|
| OCT<br>01... | 24                                     | 7.1                                          | 1.5                                                  | 2.0                                          | 0.2                                     | 1.0                                                 | 26                                              | 24                                                              | 29                                                              | 0                                                            |
| MAR<br>25... | 29                                     | 8.6                                          | 1.9                                                  | 2.5                                          | 0.2                                     | 0.9                                                 | 33                                              | 32                                                              | 39                                                              | 0                                                            |
| MAY<br>28... | 16                                     | 4.8                                          | 0.9                                                  | 1.6                                          | 0.2                                     | 0.7                                                 | 18                                              | 16                                                              | 20                                                              | 0                                                            |
| AUG<br>19... | 28                                     | 8.3                                          | 1.7                                                  | 2.4                                          | 0.2                                     | 1.0                                                 | 32                                              | 35                                                              | 43                                                              | 0                                                            |

| DATE         | CARBON<br>DIOXIDE<br>DIS-<br>SOLVED<br>(MG/L<br>AS CO2) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) |
|--------------|---------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|
| OCT<br>01... | 0.4                                                     | 5.3                                           | 0.7                                                 | <0.1                                               | 10                                                | 48                                                                 | 42                                                                  | 0.06                                                | 6.5                                               | <0.1                                                          | 0.03                                                 |
| MAR<br>25... | 3.9                                                     | 3.7                                           | 0.4                                                 | <0.1                                               | 13                                                | 43                                                                 | 50                                                                  | 0.06                                                | 2.8                                               | <0.1                                                          | <0.01                                                |
| MAY<br>28... | 0.8                                                     | 7.8                                           | 0.5                                                 | 0.1                                                | 8.8                                               | 26                                                                 | 35                                                                  | 0.03                                                | 16                                                | <0.1                                                          | 0.03                                                 |
| AUG<br>19... | 0.7                                                     | 3.9                                           | 0.3                                                 | 0.1                                                | 11                                                | 48                                                                 | 50                                                                  | 0.06                                                | 2.9                                               | <0.1                                                          | 0.01                                                 |

| DATE         | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS NH4) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|--------------|---------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| OCT<br>01... | <0.01                                                         | --                                                              | 0.77                                                 | 0.8                                                                | <0.20                                       | <0.20                                                | <0.01                                                          | 1                                         | 0.13                                                          | 50                                                            |
| MAR<br>25... | <0.01                                                         | --                                                              | --                                                   | 0.3                                                                | 0.01                                        | 0.01                                                 | <0.01                                                          | 1                                         | 0.06                                                          | 100                                                           |
| MAY<br>28... | 0.02                                                          | 0.03                                                            | 0.37                                                 | 0.4                                                                | 0.02                                        | 0.01                                                 | <0.01                                                          | 2                                         | 1.2                                                           | 75                                                            |
| AUG<br>19... | 0.03                                                          | 0.04                                                            | 0.79                                                 | 0.8                                                                | 0.02                                        | <0.01                                                | 0.02                                                           | 2                                         | 0.12                                                          | --                                                            |

06623800 ENCAMPMENT RIVER ABOVE HOG PARK CREEK, NEAR ENCAMPMENT, WY--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | ALUM-<br>INUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AL) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BERYL-<br>LIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BE) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) | COBALT,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CO) | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) |
|--------------|------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|--------------------------------------------|
| OCT<br>01... | 1330 | 30                                                  | <1                                           | 14                                           | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 3                                            | 84                                         | <5                                         |
| MAR<br>25... | 0900 | <10                                                 | <1                                           | 16                                           | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 1                                            | 51                                         | <5                                         |
| MAY<br>28... | 1030 | 50                                                  | 6                                            | 11                                           | <0.5                                                 | <1                                           | 2                                                   | <3                                           | 1                                            | 67                                         | <5                                         |
| AUG<br>19... | 1130 | <10                                                 | <1                                           | 16                                           | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 2                                            | 42                                         | <5                                         |

| DATE         | LITHIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS LI) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | STRON-<br>TIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SR) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|--------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------------|--------------------------------------------|
| OCT<br>01... | <4                                           | 3                                                    | 0.2                                          | <10                                                   | <1                                           | <1                                                  | <1                                           | 35                                                   | <6                                                 | 4                                          |
| MAR<br>25... | <4                                           | 1                                                    | 0.2                                          | <10                                                   | 1                                            | <1                                                  | <1                                           | 43                                                   | <6                                                 | 8                                          |
| MAY<br>28... | <4                                           | 2                                                    | 0.2                                          | <10                                                   | <1                                           | <1                                                  | <1                                           | 26                                                   | <6                                                 | 5                                          |
| AUG<br>19... | <4                                           | 2                                                    | 0.2                                          | <10                                                   | 2                                            | <1                                                  | <1                                           | 42                                                   | <6                                                 | <3                                         |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS<br>SR/<br>YT-90) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS<br>SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>DIS-<br>SOLVED,<br>EXTRAC-<br>TION<br>(UG/L) |
|--------------|------|------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------|
| OCT<br>01... | 1330 | <0.4                                                       | <0.4                                                       | 1.1                                                         | <0.4                                                        | 1.0                                                               | <0.4                                                              | 0.05                                                            | 0.19                                                    |
| MAY<br>28... | 1030 | <0.4                                                       | <0.4                                                       | 0.6                                                         | 0.4                                                         | 0.6                                                               | 0.4                                                               | 0.04                                                            | 0.14                                                    |

## 06625000 ENCAMPMENT RIVER AT MOUTH, NEAR ENCAMPMENT, WY

LOCATION.--Lat 41°18'12", long 106°42'53", in NE1/4 NW1/4 sec.3, T.15 N., R.83 W., Carbon County, Hydrologic Unit 10180002, on left bank 0.5 mi upstream from mouth and 8.0 mi northeast of Encampment.

DRAINAGE AREA.--265 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1940 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1710: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,970 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 28, 1961, water-stage recorder at site 660 ft upstream at datum 2.00 ft higher.

REMARKS.--Estimated daily discharges: Nov. 10-14, Dec. 1, 2, 4, 5, Dec. 8 to Mar. 8, and Mar. 21, 27-31. Records good except those for estimated daily discharges, which are poor. Five small reservoirs upstream from station for irrigation, total capacity, about 400 acre-ft. Slight regulation by Hog Park Creek Reservoir, capacity, about 2,970 acre-ft. Diversions for irrigation of about 8,800 acres upstream from station. Transbasin diversion upstream from station into Hog Park Creek (tributary to Encampment River) from North Fork Little Snake River for municipal, industrial, and irrigation uses began September 1964.

AVERAGE DISCHARGE.--47 years, 247 ft<sup>3</sup>/s, 179,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,510 ft<sup>3</sup>/s, June 1, 1943, gage height, 10.25 ft, present datum; maximum gage height, 10.33 ft, June 4, 1952, present datum; minimum daily discharge, 5.2 ft<sup>3</sup>/s, Aug. 15, 16, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft<sup>3</sup>/s and maximum (\*):

| Date                                                      | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                 | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|-----------------------------------------------------------|------|-----------------------------------|---------------------|--------------------------------------|------|-----------------------------------|---------------------|
| May 17                                                    | 0300 | *1,100                            | *4.36               | No peak greater than base discharge. |      |                                   |                     |
| Minimum daily discharge, 30 ft <sup>3</sup> /s, Sept. 25. |      |                                   |                     |                                      |      |                                   |                     |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|--------|------|------|------|------|-------|-------|-------|-------|--------|------|
| 1           | 141   | 127    | 100  | 73   | 76   | 59   | 82    | 733   | 300   | 78    | 61     | 41   |
| 2           | 152   | 118    | 102  | 75   | 78   | 60   | 78    | 766   | 253   | 68    | 51     | 43   |
| 3           | 191   | 124    | 104  | 73   | 79   | 62   | 76    | 671   | 250   | 61    | 46     | 42   |
| 4           | 171   | 126    | 102  | 75   | 78   | 64   | 85    | 618   | 243   | 58    | 40     | 45   |
| 5           | 152   | 117    | 103  | 77   | 74   | 68   | 84    | 581   | 256   | 55    | 38     | 48   |
| 6           | 147   | 131    | 102  | 76   | 76   | 73   | 84    | 550   | 263   | 49    | 38     | 46   |
| 7           | 151   | 126    | 100  | 74   | 79   | 78   | 85    | 587   | 282   | 46    | 48     | 45   |
| 8           | 157   | 110    | 95   | 70   | 81   | 81   | 90    | 569   | 383   | 53    | 55     | 48   |
| 9           | 155   | 103    | 88   | 65   | 81   | 79   | 99    | 538   | 469   | 53    | 47     | 52   |
| 10          | 150   | 99     | 75   | 67   | 80   | 76   | 86    | 621   | 400   | 50    | 41     | 48   |
| 11          | 154   | 97     | 70   | 69   | 82   | 73   | 90    | 666   | 300   | 53    | 38     | 32   |
| 12          | 124   | 99     | 78   | 71   | 81   | 76   | 97    | 701   | 260   | 110   | 37     | 34   |
| 13          | 137   | 102    | 81   | 74   | 82   | 77   | 82    | 750   | 239   | 128   | 37     | 37   |
| 14          | 137   | 116    | 85   | 73   | 83   | 83   | 85    | 769   | 227   | 81    | 38     | 41   |
| 15          | 130   | 124    | 87   | 70   | 82   | 76   | 104   | 808   | 209   | 70    | 39     | 52   |
| 16          | 126   | 120    | 85   | 68   | 77   | 76   | 130   | 927   | 192   | 62    | 51     | 39   |
| 17          | 123   | 121    | 84   | 69   | 71   | 74   | 155   | 919   | 159   | 65    | 50     | 39   |
| 18          | 125   | 117    | 83   | 71   | 71   | 74   | 195   | 866   | 149   | 66    | 40     | 39   |
| 19          | 123   | 139    | 82   | 72   | 68   | 77   | 246   | 767   | 129   | 53    | 37     | 39   |
| 20          | 124   | 122    | 81   | 69   | 66   | 77   | 237   | 663   | 117   | 48    | 32     | 50   |
| 21          | 129   | 120    | 80   | 70   | 63   | 76   | 187   | 634   | 108   | 47    | 31     | 45   |
| 22          | 145   | 124    | 79   | 69   | 62   | 74   | 194   | 535   | 100   | 47    | 45     | 34   |
| 23          | 137   | 97     | 78   | 71   | 64   | 71   | 243   | 485   | 88    | 51    | 48     | 31   |
| 24          | 131   | 116    | 78   | 72   | 63   | 69   | 314   | 453   | 80    | 47    | 64     | 31   |
| 25          | 134   | 116    | 78   | 75   | 62   | 73   | 354   | 426   | 60    | 46    | 79     | 30   |
| 26          | 123   | 111    | 76   | 76   | 61   | 69   | 399   | 392   | 61    | 55    | 75     | 33   |
| 27          | 125   | 107    | 77   | 75   | 60   | 68   | 406   | 347   | 52    | 58    | 64     | 33   |
| 28          | 128   | 105    | 78   | 76   | 58   | 66   | 514   | 301   | 41    | 72    | 56     | 32   |
| 29          | 124   | 109    | 79   | 73   | ---  | 64   | 650   | 283   | 50    | 73    | 52     | 34   |
| 30          | 121   | 104    | 78   | 73   | ---  | 68   | 670   | 302   | 61    | 64    | 46     | 37   |
| 31          | 135   | ---    | 75   | 75   | ---  | 74   | ---   | 286   | ---   | 55    | 42     | ---  |
| TOTAL       | 4302  | 3447   | 2643 | 2236 | 2038 | 2235 | 6201  | 18514 | 5781  | 1922  | 1466   | 1200 |
| MEAN        | 139   | 115    | 85.3 | 72.1 | 72.8 | 72.1 | 207   | 597   | 193   | 62.0  | 47.3   | 40.0 |
| MAX         | 191   | 139    | 104  | 77   | 83   | 83   | 670   | 927   | 469   | 128   | 79     | 52   |
| MIN         | 121   | 97     | 70   | 65   | 58   | 59   | 76    | 283   | 41    | 46    | 31     | 30   |
| AC-FT       | 8530  | 6840   | 5240 | 4440 | 4040 | 4430 | 12300 | 36720 | 11470 | 3810  | 2910   | 2380 |
| CAL YR 1986 | TOTAL | 128379 |      | MEAN | 352  | MAX  | 3370  | MIN   | 29    | AC-FT | 254600 |      |
| WTR YR 1987 | TOTAL | 51985  |      | MEAN | 142  | MAX  | 927   | MIN   | 30    | AC-FT | 103100 |      |

412117106433201 NORTH PLATTE RIVER AT HIGHWAY 130, NEAR SARATOGA, WY

LOCATION.--Lat 41°21'17", long 106°42'53", in SW1/4 SE1/4 NE1/4 sec.16, T.16 N., R.83 W., Carbon County, Hydrologic Unit 10180002, at bridge on Highway 130, 1.2 mi downstream from Cow Creek and 30.2 mi south of Saratoga.

PERIOD OF RECORD.--May 1984 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>08... | 1200 | 1040                                            | 14.0                                 | <0.01                                                           | 0.03                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>07... | 1800 | 285                                             | 19.5                                 | <0.01                                                           | 0.03                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>30... | 1400 | 167                                             | 15.0                                 | <0.01                                                           | 0.02                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |



06628900 PASS CREEK NEAR ELK MOUNTAIN, WY

LOCATION.--Lat 41°35'12", long 106°36'40", in NE1/4 SE1/4 SE1/4 sec.28, T.19 N., R.82 W., Carbon County, Hydrologic Unit 10180002, on right bank 500 ft upstream from bridge on county road, 700 ft upstream from Brush Creek, 12 mi southwest of town of Elk Mountain, and 14 mi northeast of Saratoga. Prior to Sept. 23, 1987, at site 289 ft upstream.

DRAINAGE AREA.--91.5 mi<sup>2</sup>. Area at mouth, 279 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Elevation of gage is 7,230 ft above National Geodetic Vertical Datum of 1929, from topographic map. Apr. 18, 1957 to Oct. 6, 1966, 274 ft upstream at datum 6.00 ft higher. Oct. 7, 1966, to Sept. 23, 1987, at site 289 ft upstream at datum 6.00 ft higher.

REMARKS.--Estimated daily discharges: Nov. 9-15, Nov. 18 to Mar. 15, Mar. 21-24, 26, 28-31, and Apr. 1-3. Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 6,300 acres upstream from station. Diversion to Kerr ditch 7.5 mi upstream.

AVERAGE DISCHARGE.--30 years, 43.1 ft<sup>3</sup>/s, 31,230 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,660 ft<sup>3</sup>/s, May 12, 1984, gage height, 9.12 ft, site and datum then in use, from floodmarks, from rating curve extended above 1,600 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily discharge, 1.5 ft<sup>3</sup>/s, Sept. 11, 12, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1938, 9.12 ft, May 12, 1984, site and datum then in use, from floodmarks, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and maximum (\*):

| Date  | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|-------|------|--------------------------------|------------------|--------|------|--------------------------------|------------------|
| Apr 8 | 2030 | *347                           | *2.26            | May 12 | 0500 | *347                           | 2.24             |

Minimum daily discharge, 2.7 ft<sup>3</sup>/s, Sept. 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN   | FEB   | MAR  | APR  | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|---------|------|-------|-------|------|------|------|------|-------|-------|-------|
| 1           | 19    | 19      | 13   | 9.1   | 11    | 10   | 15   | 129  | 36   | 17    | 6.7   | 3.7   |
| 2           | 28    | 16      | 14   | 9.7   | 12    | 11   | 17   | 120  | 27   | 17    | 5.4   | 3.3   |
| 3           | 30    | 20      | 15   | 9.5   | 13    | 12   | 19   | 78   | 28   | 14    | 4.7   | 3.2   |
| 4           | 26    | 18      | 15   | 9.9   | 13    | 14   | 37   | 58   | 28   | 13    | 3.9   | 3.7   |
| 5           | 24    | 19      | 16   | 11    | 12    | 28   | 70   | 55   | 26   | 12    | 3.7   | 6.7   |
| 6           | 20    | 21      | 15   | 11    | 11    | 35   | 120  | 60   | 25   | 11    | 3.7   | 4.7   |
| 7           | 18    | 18      | 14   | 10    | 11    | 45   | 164  | 69   | 27   | 9.9   | 4.5   | 4.1   |
| 8           | 17    | 15      | 13   | 9.6   | 12    | 40   | 202  | 73   | 54   | 9.2   | 8.5   | 3.7   |
| 9           | 18    | 13      | 11   | 8.9   | 12    | 31   | 131  | 71   | 96   | 9.6   | 7.0   | 3.5   |
| 10          | 17    | 11      | 10   | 9.3   | 13    | 25   | 67   | 76   | 62   | 9.9   | 5.1   | 3.2   |
| 11          | 19    | 12      | 11   | 9.6   | 13    | 20   | 59   | 82   | 44   | 9.6   | 4.5   | 3.0   |
| 12          | 20    | 13      | 11   | 10    | 13    | 18   | 50   | 247  | 39   | 16    | 4.3   | 3.0   |
| 13          | 19    | 14      | 12   | 10    | 14    | 26   | 33   | 152  | 34   | 16    | 4.1   | 2.7   |
| 14          | 19    | 17      | 12   | 9.7   | 14    | 31   | 50   | 121  | 30   | 12    | 4.3   | 2.7   |
| 15          | 17    | 20      | 12   | 9.5   | 13    | 26   | 103  | 105  | 27   | 9.6   | 5.1   | 2.9   |
| 16          | 17    | 22      | 12   | 9.1   | 13    | 22   | 119  | 99   | 46   | 8.2   | 11    | 3.0   |
| 17          | 16    | 21      | 11   | 8.9   | 12    | 18   | 111  | 101  | 41   | 9.9   | 6.1   | 2.9   |
| 18          | 16    | 20      | 10   | 9.2   | 12    | 18   | 96   | 102  | 40   | 19    | 4.5   | 3.2   |
| 19          | 16    | 21      | 11   | 9.4   | 11    | 16   | 85   | 87   | 41   | 11    | 4.1   | 3.2   |
| 20          | 16    | 23      | 12   | 8.9   | 11    | 16   | 56   | 104  | 41   | 7.6   | 3.5   | 3.9   |
| 21          | 18    | 21      | 11   | 9.3   | 10    | 14   | 48   | 157  | 41   | 7.0   | 3.3   | 4.1   |
| 22          | 25    | 19      | 10   | 9.4   | 11    | 12   | 79   | 130  | 39   | 7.0   | 4.7   | 4.1   |
| 23          | 27    | 16      | 10   | 9.6   | 11    | 13   | 96   | 101  | 34   | 5.9   | 5.1   | 4.3   |
| 24          | 22    | 17      | 10   | 9.7   | 11    | 13   | 88   | 93   | 33   | 5.4   | 6.1   | 4.4   |
| 25          | 21    | 17      | 10   | 10    | 11    | 13   | 85   | 116  | 32   | 5.1   | 7.6   | 5.4   |
| 26          | 19    | 16      | 10   | 10    | 11    | 13   | 84   | 89   | 31   | 4.9   | 7.6   | 13    |
| 27          | 18    | 16      | 10   | 11    | 10    | 13   | 101  | 102  | 28   | 9.2   | 7.9   | 13    |
| 28          | 17    | 17      | 11   | 12    | 9.9   | 11   | 99   | 92   | 24   | 8.5   | 6.1   | 14    |
| 29          | 17    | 17      | 11   | 13    | ---   | 10   | 105  | 81   | 30   | 7.0   | 5.4   | 15    |
| 30          | 16    | 15      | 11   | 13    | ---   | 11   | 114  | 92   | 22   | 6.7   | 4.5   | 15    |
| 31          | 18    | ---     | 10   | 12    | ---   | 13   | ---  | 57   | ---  | 8.5   | 3.7   | ---   |
| TOTAL       | 610   | 524     | 364  | 311.3 | 330.9 | 598  | 2503 | 3099 | 1106 | 316.7 | 166.7 | 162.6 |
| MEAN        | 19.7  | 17.5    | 11.7 | 10.0  | 11.8  | 19.3 | 83.4 | 100  | 36.9 | 10.2  | 5.38  | 5.42  |
| MAX         | 30    | 23      | 16   | 13    | 14    | 45   | 202  | 247  | 96   | 19    | 11    | 15    |
| MIN         | 16    | 11      | 10   | 8.9   | 9.9   | 10   | 15   | 55   | 22   | 4.9   | 3.3   | 2.7   |
| AC-FT       | 1210  | 1040    | 722  | 617   | 656   | 1190 | 4960 | 6150 | 2190 | 628   | 331   | 323   |
| CAL YR 1986 | TOTAL | 21425.4 |      | MEAN  | 58.7  | MAX  | 1500 | MIN  | 8.7  | AC-FT | 42500 |       |
| WTR YR 1987 | TOTAL | 10092.2 |      | MEAN  | 27.6  | MAX  | 247  | MIN  | 2.7  | AC-FT | 20020 |       |

06630000 NORTH PLATTE RIVER ABOVE SEMINOLE RESERVOIR, NEAR SINCLAIR, WY

LOCATION.--Lat 41°52'20", long 107°03'25", in SW1/4 SW1/4 sec.13, T.22 N., R.86 W., Carbon County, Hydrologic Unit 10180002, on left bank 6.5 mi northeast of Sinclair and 14 mi upstream from high-water line of Seminole Reservoir at elevation 6,357 ft.

DRAINAGE AREA.--4,175 mi<sup>2</sup>, of which 114 mi<sup>2</sup> is probably noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1939 to current year. Prior to October 1943, published as "near Parco."

REVISED RECORDS.--WDR-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,400.75 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 8-15, 18, Dec. 1 to Mar. 23, Mar. 28-31, and Sept. 6-8. Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 215,000 acres upstream from station. Transbasin diversions upstream from station.

COOPERATION.--Nine discharge measurements provided by the Bureau of Reclamation and eight discharge measurements provided by the Wyoming State Engineer's office.

AVERAGE DISCHARGE.--48 years, 1,160 ft<sup>3</sup>/s, 840,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,200 ft<sup>3</sup>/s, June 11, 1986, gage height, 11.30 ft; minimum daily, 70 ft<sup>3</sup>/s, Sept. 17, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,820 ft<sup>3</sup>/s, May 2, gage height, 4.66 ft; minimum daily, 150 ft<sup>3</sup>/s, Sept. 14, 16, 27-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY    | JUN   | JUL   | AUG     | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|--------|-------|-------|---------|-------|
| 1           | 762   | 800    | 650   | 282   | 370   | 400   | 530   | 2600   | 1150  | 361   | 461     | 230   |
| 2           | 772   | 791    | 560   | 292   | 363   | 420   | 601   | 2760   | 1020  | 456   | 483     | 215   |
| 3           | 838   | 744    | 595   | 300   | 373   | 450   | 619   | 2640   | 891   | 470   | 468     | 200   |
| 4           | 888   | 791    | 635   | 298   | 390   | 486   | 653   | 2300   | 823   | 444   | 406     | 205   |
| 5           | 909   | 829    | 670   | 318   | 400   | 535   | 808   | 2030   | 767   | 433   | 347     | 225   |
| 6           | 899   | 773    | 700   | 350   | 412   | 585   | 898   | 1840   | 758   | 409   | 308     | 210   |
| 7           | 849   | 810    | 660   | 375   | 425   | 635   | 970   | 1750   | 788   | 371   | 286     | 200   |
| 8           | 800   | 770    | 600   | 335   | 440   | 670   | 1060  | 1690   | 867   | 342   | 295     | 190   |
| 9           | 781   | 700    | 395   | 300   | 455   | 670   | 1140  | 1550   | 1450  | 330   | 341     | 180   |
| 10          | 753   | 500    | 285   | 276   | 485   | 650   | 1280  | 1540   | 2060  | 330   | 302     | 183   |
| 11          | 744   | 460    | 340   | 278   | 533   | 640   | 1190  | 1600   | 1850  | 311   | 281     | 191   |
| 12          | 734   | 475    | 390   | 298   | 553   | 690   | 1200  | 1640   | 1620  | 308   | 276     | 177   |
| 13          | 689   | 560    | 425   | 318   | 560   | 745   | 1200  | 1910   | 1390  | 371   | 255     | 154   |
| 14          | 671   | 635    | 490   | 295   | 555   | 805   | 983   | 1910   | 1210  | 518   | 245     | 150   |
| 15          | 716   | 780    | 535   | 270   | 550   | 860   | 860   | 1820   | 1090  | 576   | 240     | 153   |
| 16          | 699   | 878    | 545   | 248   | 542   | 800   | 999   | 1830   | 994   | 506   | 250     | 150   |
| 17          | 689   | 889    | 500   | 260   | 537   | 780   | 1350  | 1980   | 891   | 427   | 250     | 168   |
| 18          | 671   | 870    | 445   | 270   | 525   | 755   | 1710  | 2200   | 792   | 405   | 255     | 173   |
| 19          | 662   | 764    | 390   | 280   | 507   | 710   | 1880  | 2210   | 735   | 600   | 245     | 172   |
| 20          | 653   | 856    | 410   | 268   | 480   | 690   | 2050  | 2150   | 663   | 428   | 230     | 186   |
| 21          | 662   | 773    | 425   | 287   | 465   | 685   | 1910  | 2170   | 602   | 373   | 205     | 195   |
| 22          | 715   | 858    | 397   | 302   | 450   | 655   | 1690  | 2110   | 553   | 346   | 227     | 196   |
| 23          | 828   | 884    | 372   | 310   | 433   | 615   | 1540  | 2000   | 512   | 319   | 210     | 186   |
| 24          | 813   | 718    | 348   | 320   | 445   | 604   | 1680  | 1980   | 482   | 313   | 230     | 172   |
| 25          | 810   | 680    | 320   | 333   | 435   | 570   | 1940  | 1950   | 452   | 302   | 235     | 163   |
| 26          | 829   | 812    | 300   | 335   | 428   | 569   | 2120  | 1910   | 431   | 297   | 291     | 154   |
| 27          | 791   | 820    | 310   | 357   | 420   | 545   | 2170  | 1730   | 396   | 297   | 324     | 150   |
| 28          | 766   | 708    | 318   | 360   | 412   | 520   | 2220  | 1640   | 356   | 292   | 313     | 150   |
| 29          | 762   | 655    | 324   | 360   | ---   | 435   | 2470  | 1540   | 333   | 319   | 286     | 150   |
| 30          | 744   | 743    | 318   | 356   | ---   | 445   | 2530  | 1440   | 311   | 446   | 255     | 154   |
| 31          | 753   | ---    | 298   | 350   | ---   | 475   | ---   | 1300   | ---   | 433   | 245     | ---   |
| TOTAL       | 23652 | 22326  | 13950 | 9581  | 12943 | 19094 | 42251 | 59720  | 26237 | 12133 | 9045    | 5382  |
| MEAN        | 763   | 744    | 450   | 309   | 462   | 616   | 1408  | 1926   | 875   | 391   | 292     | 179   |
| MAX         | 909   | 889    | 700   | 375   | 560   | 860   | 2530  | 2760   | 2060  | 600   | 483     | 230   |
| MIN         | 653   | 460    | 285   | 248   | 363   | 400   | 530   | 1300   | 311   | 292   | 205     | 150   |
| AC-FT       | 46910 | 44280  | 27670 | 19000 | 25670 | 37870 | 83800 | 118500 | 52040 | 24070 | 17940   | 10680 |
| CAL YR 1986 | TOTAL | 696494 |       | MEAN  | 1908  | MAX   | 14800 | MIN    | 285   | AC-FT | 1381000 |       |
| WTR YR 1987 | TOTAL | 256314 |       | MEAN  | 702   | MAX   | 2760  | MIN    | 150   | AC-FT | 508400  |       |

## PLATTE RIVER BASIN

06630000 NORTH PLATTE RIVER ABOVE SEMINOLE RESERVOIR, NEAR SINCLAIR, WY--Continued  
(National stream-quality accounting network station)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: March 1978 to October 1978.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TUR-<br>BID-<br>ITY<br>(NTU) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|-------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|------------------------------|--------------------------------------|------------------------------------------------|-------------------------------------|-------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------|
| OCT   |      |                                                 |                                                   |                                |                              |                                      |                                                |                                     |                                                       |                                                                |                                                                    |
| 02... | 1230 | 790                                             | 360                                               | 8.0                            | 47                           | 9.0                                  | 593                                            | 8.8                                 | 98                                                    | K14                                                            | K430                                                               |
| 28... | 1110 | 777                                             | 419                                               | 8.4                            | --                           | 9.5                                  | 606                                            | 9.7                                 | 107                                                   | K1                                                             | --                                                                 |
| DEC   |      |                                                 |                                                   |                                |                              |                                      |                                                |                                     |                                                       |                                                                |                                                                    |
| 01... | 1200 | 709                                             | 480                                               | 8.3                            | 6.3                          | 0.0                                  | 602                                            | 11.8                                | 102                                                   | K1                                                             | --                                                                 |
| FEB   |      |                                                 |                                                   |                                |                              |                                      |                                                |                                     |                                                       |                                                                |                                                                    |
| 25... | 1030 | 436                                             | 460                                               | 7.6                            | 0.6                          | 0.0                                  | 593                                            | 11.0                                | 97                                                    | K1                                                             | K3                                                                 |
| MAR   |      |                                                 |                                                   |                                |                              |                                      |                                                |                                     |                                                       |                                                                |                                                                    |
| 24... | 1130 | 580                                             | 460                                               | 7.6                            | --                           | 2.0                                  | 595                                            | 11.2                                | 104                                                   | <1                                                             | --                                                                 |
| APR   |      |                                                 |                                                   |                                |                              |                                      |                                                |                                     |                                                       |                                                                |                                                                    |
| 28... | 1500 | 2090                                            | 245                                               | 7.6                            | 19                           | 14.0                                 | 603                                            | 8.4                                 | 103                                                   | K21                                                            | K9                                                                 |
| MAY   |      |                                                 |                                                   |                                |                              |                                      |                                                |                                     |                                                       |                                                                |                                                                    |
| 18... | 1030 | 2070                                            | 210                                               | 7.6                            | --                           | 14.0                                 | 597                                            | 8.7                                 | 108                                                   | 42                                                             | --                                                                 |
| JUN   |      |                                                 |                                                   |                                |                              |                                      |                                                |                                     |                                                       |                                                                |                                                                    |
| 30... | 1030 | 309                                             | 500                                               | 7.8                            | 1.0                          | 19.0                                 | 603                                            | 8.2                                 | 113                                                   | K18                                                            | 42                                                                 |
| AUG   |      |                                                 |                                                   |                                |                              |                                      |                                                |                                     |                                                       |                                                                |                                                                    |
| 14... | 0900 | 246                                             | 480                                               | 8.4                            | --                           | 18.0                                 | 596                                            | 8.1                                 | 110                                                   | 20                                                             | --                                                                 |
| SEP   |      |                                                 |                                                   |                                |                              |                                      |                                                |                                     |                                                       |                                                                |                                                                    |
| 16... | 1330 | 152                                             | 480                                               | 8.5                            | 7.2                          | 16.5                                 | 613                                            | 9.1                                 | 117                                                   | 30                                                             | --                                                                 |

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

| DATE  | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | ALKA-<br>LINITY,<br>CARBON-<br>ATE<br>IT-FLD<br>(MG/L<br>CACO3) | BICAR-<br>BONATE<br>WH WAT<br>TOTAL<br>FIELD<br>MG/L AS<br>HCO3 | CAR-<br>BONATE<br>WH WAT<br>TOTAL<br>FIELD<br>MG/L AS<br>CO3 |
|-------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|
| OCT   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                                                 |                                                                 |                                                              |
| 02... | 150                                    | 41                                           | 11                                                   | 21                                           | 0.8                                     | 2.3                                                 | 109                                             | 112                                                             | 140                                                             | 0                                                            |
| 28... | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                              | --                                                              | --                                                              | --                                                           |
| DEC   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                                                 |                                                                 |                                                              |
| 01... | 190                                    | 50                                           | 15                                                   | 27                                           | 0.9                                     | 2.4                                                 | 130                                             | 128                                                             | 110                                                             | 24                                                           |
| FEB   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                                                 |                                                                 |                                                              |
| 25... | 200                                    | 55                                           | 15                                                   | 26                                           | 0.8                                     | 2.8                                                 | 136                                             | 122                                                             | 150                                                             | 0                                                            |
| MAR   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                                                 |                                                                 |                                                              |
| 24... | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                              | --                                                              | --                                                              | --                                                           |
| APR   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                                                 |                                                                 |                                                              |
| 28... | 88                                     | 24                                           | 6.9                                                  | 12                                           | 0.6                                     | 2.4                                                 | 75                                              | 80                                                              | 98                                                              | 0                                                            |
| MAY   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                                                 |                                                                 |                                                              |
| 18... | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                              | --                                                              | --                                                              | --                                                           |
| JUN   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                                                 |                                                                 |                                                              |
| 30... | 180                                    | 42                                           | 18                                                   | 38                                           | 1                                       | 3.2                                                 | 136                                             | 128                                                             | 160                                                             | 0                                                            |
| AUG   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                                                 |                                                                 |                                                              |
| 14... | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                              | --                                                              | --                                                              | --                                                           |
| SEP   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                                                 |                                                                 |                                                              |
| 16... | 170                                    | 43                                           | 14                                                   | 33                                           | 1                                       | 3.1                                                 | 123                                             | 110                                                             | 61                                                              | 36                                                           |

06630000 NORTH PLATTE RIVER ABOVE SEMINOLE RESERVOIR, NEAR SINCLAIR, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | CARBON<br>DIOXIDE<br>DIS-<br>SOLVED<br>(MG/L<br>AS CO2) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) |
|-----------|---------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|
| OCT 02... | 2.2                                                     | 73                                            | 7.0                                                 | 0.4                                                | 14                                                | 257                                                                | 240                                                                 | 0.35                                                | 548                                               | --                                                   | <0.1                                                          |
| 28...     | 0                                                       | --                                            | --                                                  | --                                                 | --                                                | --                                                                 | --                                                                  | --                                                  | --                                                | <0.1                                                 | --                                                            |
| DEC 01... | 0.9                                                     | 98                                            | 7.8                                                 | 0.4                                                | 17                                                | 294                                                                | 320                                                                 | 0.40                                                | 563                                               | --                                                   | <0.1                                                          |
| FEB 25... | 5.9                                                     | 110                                           | 11                                                  | 0.4                                                | 18                                                | 316                                                                | 310                                                                 | 0.43                                                | 372                                               | --                                                   | <0.1                                                          |
| MAR 24... | 0                                                       | --                                            | --                                                  | --                                                 | --                                                | --                                                                 | --                                                                  | --                                                  | --                                                | <0.1                                                 | --                                                            |
| APR 28... | 3.9                                                     | 45                                            | 3.7                                                 | 0.2                                                | 11                                                | 151                                                                | 150                                                                 | 0.21                                                | 852                                               | --                                                   | <0.1                                                          |
| MAY 18... | 0                                                       | --                                            | --                                                  | --                                                 | --                                                | --                                                                 | --                                                                  | --                                                  | --                                                | <0.1                                                 | --                                                            |
| JUN 30... | 3.9                                                     | 110                                           | 9.5                                                 | 0.6                                                | 0.2                                               | 303                                                                | 300                                                                 | 0.41                                                | 253                                               | --                                                   | <0.1                                                          |
| AUG 14... | 0                                                       | --                                            | --                                                  | --                                                 | --                                                | --                                                                 | --                                                                  | --                                                  | --                                                | <0.1                                                 | --                                                            |
| SEP 16... | 0.3                                                     | 99                                            | 11                                                  | 0.5                                                | 5.6                                               | 292                                                                | 310                                                                 | 0.40                                                | 120                                               | --                                                   | <0.1                                                          |

| DATE      | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS NH4) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|-----------|------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| OCT 02... | 0.03                                                 | <0.05                                                         | --                                                              | 0.27                                                 | 0.3                                                                | 0.02                                        | 0.04                                                 | 0.02                                                           | 99                                        | 211                                                           | 99                                                            |
| 28...     | <0.01                                                | --                                                            | --                                                              | --                                                   | 0.5                                                                | 0.01                                        | --                                                   | --                                                             | --                                        | --                                                            | --                                                            |
| DEC 01... | 0.04                                                 | 0.01                                                          | 0.01                                                            | 0.46                                                 | 0.5                                                                | 0.04                                        | 0.02                                                 | 0.01                                                           | 51                                        | 98                                                            | 96                                                            |
| FEB 25... | 0.03                                                 | 0.03                                                          | 0.04                                                            | 0.37                                                 | 0.4                                                                | <0.01                                       | <0.01                                                | <0.01                                                          | 6                                         | 7.1                                                           | 84                                                            |
| MAR 24... | 0.04                                                 | --                                                            | --                                                              | 0.56                                                 | 0.6                                                                | 0.05                                        | --                                                   | --                                                             | --                                        | --                                                            | --                                                            |
| APR 28... | 0.02                                                 | 0.01                                                          | 0.01                                                            | 1.7                                                  | 1.7                                                                | 0.14                                        | 0.03                                                 | 0.03                                                           | 122                                       | 688                                                           | 87                                                            |
| MAY 18... | 0.02                                                 | --                                                            | --                                                              | 0.88                                                 | 0.9                                                                | 0.05                                        | --                                                   | --                                                             | --                                        | --                                                            | --                                                            |
| JUN 30... | 0.04                                                 | 0.05                                                          | 0.06                                                            | 0.66                                                 | 0.7                                                                | 0.01                                        | 0.01                                                 | 0.01                                                           | 3                                         | 2.5                                                           | 78                                                            |
| AUG 14... | 0.03                                                 | --                                                            | --                                                              | 1.1                                                  | 1.1                                                                | 0.07                                        | --                                                   | --                                                             | --                                        | --                                                            | --                                                            |
| SEP 16... | 0.02                                                 | <0.01                                                         | --                                                              | 0.48                                                 | 0.5                                                                | 0.03                                        | 0.01                                                 | <0.01                                                          | 24                                        | 9.8                                                           | --                                                            |

| DATE      | TIME | ALUM-<br>INUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AL) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BERYL-<br>LIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BE) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) | COBALT,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CO) | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) |
|-----------|------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|--------------------------------------------|
| DEC 01... | 1200 | <10                                                 | 1                                            | 47                                           | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 1                                            | 53                                         | <5                                         |
| FEB 25... | 1030 | <10                                                 | 1                                            | 51                                           | <0.5                                                 | 1                                            | <1                                                  | <3                                           | 1                                            | 43                                         | <5                                         |
| JUN 30... | 1030 | <10                                                 | 1                                            | 48                                           | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 1                                            | 25                                         | <5                                         |
| SEP 16... | 1330 | <10                                                 | 2                                            | 46                                           | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 4                                            | 12                                         | <5                                         |

| DATE      | LITHIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS LI) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | STRON-<br>TIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SR) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|-----------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------------|--------------------------------------------|
| DEC 01... | 30                                           | 22                                                   | 0.1                                          | <10                                                   | 2                                            | 1                                                   | <1                                           | 340                                                  | <6                                                 | <3                                         |
| FEB 25... | 33                                           | 13                                                   | 0.2                                          | <10                                                   | 2                                            | <1                                                  | <1                                           | 360                                                  | <6                                                 | 50                                         |
| JUN 30... | 36                                           | 7                                                    | <0.1                                         | <10                                                   | <1                                           | <1                                                  | <1                                           | 370                                                  | <6                                                 | 6                                          |
| SEP 16... | 32                                           | 11                                                   | 0.2                                          | <10                                                   | 1                                            | 1                                                   | <1                                           | 340                                                  | <6                                                 | 7                                          |

06632400 ROCK CREEK ABOVE KING CANYON CANAL, NEAR ARLINGTON, WY

LOCATION.--Lat 41°35'07", long 106°13'20", in SE1/4 SW1/4 sec.25 T.19 N., R.79 W., Carbon County, Hydrologic Unit 10180004, on left bank 200 ft upstream from point of diversion to King Canyon Canal, 0.4 mi downstream from Overland Creek, 1.0 mi southwest of Arlington, and 6.9 mi southwest of McFadden.

DRAINAGE AREA.--62.9 mi<sup>2</sup>.

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

REVISED RECORDS.--WDR WY-86: 1985(m). WDR WY-87: 1985.

GAGE.--Water-stage recorder. Elevation of gage is 7,790 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 13-31, Nov. 1-4, 7-14, Nov. 18 to Feb. 7, Feb. 27 to Mar. 4, Mar. 6, 7, 11, 12, 15, 18, 20-23, 26-31, Apr. 1-7, 10, 13, 14, 21. Records good except those for October to April, which are poor. Minor regulation by Sand Lake, capacity, 1,100 acre-ft, on Deep Creek, 12 mi upstream. No diversion upstream from station.

COOPERATION.--Stage record and nine discharge measurements provided by Office of the Wyoming State Engineer. Records computed and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--33 years (water years 1955-87) 83.7 ft<sup>3</sup>/s, 60,640 acre-ft/yr, includes records for station 06632500 Rock Creek at Arlington for water years 1955-65, adjusted for diversions by King Canyon Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,590 ft<sup>3</sup>/s, June 19, 1971, gage height, 5.83 ft; maximum gage height, 5.92 ft, June 24, 1983; minimum daily discharge, 5.5 ft<sup>3</sup>/s, Dec. 21, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|--------|------|--------------------------------|------------------|
| May 16 | 1900 | *842                           | *3.99            | June 8 | 2000 | 738                            | 3.82             |

Minimum daily discharge, 7.4 ft<sup>3</sup>/s, Aug. 20, 21.

REVISIONS.--Revised figures of discharge for the water year 1985, superseding those published in the report for 1985, are given below.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------------|-------|---------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1           | 25    | 19      | 18   | 12    | 6.0   | 9.5   | 7.8   | 53    | 329   | 140   | 29    | 13    |
| 2           | 25    | 18      | 18   | 12    | 6.6   | 9.0   | 8.4   | 72    | 340   | 128   | 26    | 15    |
| 3           | 25    | 18      | 17   | 13    | 7.0   | 7.6   | 9.4   | 101   | 340   | 114   | 25    | 16    |
| 4           | 25    | 17      | 17   | 13    | 7.3   | 7.5   | 10    | 160   | 399   | 93    | 24    | 17    |
| 5           | 33    | 16      | 17   | 13    | 7.4   | 8.1   | 11    | 207   | 421   | 84    | 22    | 14    |
| 6           | 32    | 17      | 17   | 12    | 7.4   | 8.0   | 11    | 192   | 488   | 75    | 21    | 13    |
| 7           | 26    | 17      | 17   | 13    | 7.5   | 7.7   | 12    | 195   | 669   | 69    | 21    | 13    |
| 8           | 24    | 18      | 17   | 12    | 7.7   | 7.6   | 13    | 260   | 715   | 69    | 20    | 15    |
| 9           | 23    | 17      | 16   | 10    | 7.6   | 7.2   | 15    | 322   | 554   | 63    | 20    | 15    |
| 10          | 23    | 15      | 15   | 8.5   | 7.7   | 6.8   | 17    | 367   | 435   | 58    | 18    | 15    |
| 11          | 23    | 16      | 14   | 8.5   | 7.8   | 6.8   | 20    | 336   | 345   | 55    | 19    | 15    |
| 12          | 23    | 17      | 16   | 7.7   | 8.0   | 6.4   | 21    | 239   | 303   | 92    | 22    | 17    |
| 13          | 22    | 16      | 17   | 8.0   | 8.1   | 6.2   | 23    | 190   | 299   | 61    | 20    | 15    |
| 14          | 21    | 17      | 17   | 8.4   | 8.3   | 6.0   | 24    | 168   | 306   | 51    | 18    | 14    |
| 15          | 13    | 15      | 17   | 8.7   | 8.5   | 6.4   | 30    | 166   | 310   | 46    | 17    | 13    |
| 16          | 17    | 16      | 16   | 9.2   | 8.6   | 6.6   | 39    | 177   | 336   | 42    | 16    | 11    |
| 17          | 22    | 17      | 15   | 9.4   | 8.7   | 6.6   | 51    | 195   | 295   | 40    | 19    | 10    |
| 18          | 24    | 16      | 15   | 9.2   | 9.3   | 6.8   | 58    | 222   | 242   | 57    | 21    | 9.0   |
| 19          | 25    | 15      | 15   | 9.0   | 11    | 7.0   | 69    | 228   | 216   | 83    | 20    | 9.5   |
| 20          | 25    | 14      | 15   | 9.0   | 11    | 6.7   | 57    | 222   | 207   | 58    | 19    | 10    |
| 21          | 24    | 15      | 14   | 8.1   | 10    | 6.6   | 51    | 297   | 198   | 47    | 17    | 11    |
| 22          | 23    | 16      | 13   | 8.1   | 9.5   | 7.1   | 45    | 362   | 169   | 41    | 15    | 11    |
| 23          | 22    | 17      | 14   | 7.6   | 9.0   | 7.6   | 47    | 396   | 153   | 40    | 14    | 12    |
| 24          | 20    | 15      | 15   | 7.2   | 8.5   | 7.3   | 41    | 408   | 166   | 39    | 13    | 14    |
| 25          | 19    | 15      | 16   | 7.6   | 8.1   | 8.0   | 39    | 474   | 230   | 35    | 13    | 14    |
| 26          | 19    | 13      | 16   | 7.6   | 7.6   | 8.8   | 36    | 536   | 222   | 34    | 15    | 15    |
| 27          | 19    | 12      | 17   | 7.4   | 8.2   | 8.6   | 43    | 547   | 201   | 33    | 16    | 18    |
| 28          | 19    | 14      | 15   | 7.4   | 8.5   | 8.3   | 38    | 571   | 177   | 30    | 16    | 22    |
| 29          | 20    | 15      | 13   | 7.3   | ---   | 8.0   | 43    | 552   | 158   | 31    | 16    | 16    |
| 30          | 20    | 16      | 12   | 6.8   | ---   | 7.5   | 50    | 467   | 150   | 33    | 15    | 12    |
| 31          | 20    | ---     | 12   | 6.3   | ---   | 7.4   | ---   | 360   | ---   | 32    | 15    | ---   |
| TOTAL       | 701   | 479     | 483  | 287.0 | 230.9 | 229.7 | 939.6 | 9042  | 9373  | 1873  | 582   | 414.5 |
| MEAN        | 22.6  | 16.0    | 15.6 | 9.26  | 8.25  | 7.41  | 31.3  | 292   | 312   | 60.4  | 18.8  | 13.8  |
| MAX         | 33    | 19      | 18   | 13    | 11    | 9.5   | 69    | 571   | 715   | 140   | 29    | 22    |
| MIN         | 13    | 12      | 12   | 6.3   | 6.0   | 6.0   | 7.8   | 53    | 150   | 30    | 13    | 9.0   |
| AC-FT       | 1390  | 950     | 958  | 569   | 458   | 456   | 1860  | 17930 | 18590 | 3720  | 1150  | 822   |
| CAL YR 1984 | TOTAL | 33657.1 |      | MEAN  | 92.0  | MAX   | 702   | MIN   | 9.5   | AC-FT | 66760 |       |
| WTR YR 1985 | TOTAL | 24634.7 |      | MEAN  | 67.5  | MAX   | 715   | MIN   | 6.0   | AC-FT | 48860 |       |

06632400 ROCK CREEK ABOVE KING CANYON CANAL, NEAR ARLINGTON, WY--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR   | APR    | MAY   | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|---------|-------|-------|-------|-------|--------|-------|------|-------|-------|-------|
| 1           | 16    | 13      | 11    | 8.6   | 9.0   | 8.5   | 9.6    | 219   | 235  | 62    | 33    | 8.7   |
| 2           | 18    | 12      | 11    | 9.3   | 9.0   | 8.4   | 9.7    | 220   | 199  | 55    | 26    | 8.3   |
| 3           | 23    | 12      | 11    | 8.8   | 9.0   | 8.6   | 10     | 150   | 185  | 52    | 23    | 8.3   |
| 4           | 20    | 12      | 11    | 9.1   | 9.0   | 8.6   | 11     | 118   | 190  | 46    | 20    | 20    |
| 5           | 18    | 12      | 11    | 9.3   | 9.0   | 8.7   | 11     | 115   | 199  | 41    | 20    | 23    |
| 6           | 16    | 13      | 11    | 9.1   | 9.2   | 9.5   | 12     | 161   | 193  | 38    | 19    | 22    |
| 7           | 13    | 14      | 10    | 9.0   | 9.3   | 10    | 13     | 216   | 244  | 36    | 22    | 21    |
| 8           | 13    | 13      | 9.9   | 8.9   | 9.1   | 9.8   | 14     | 325   | 436  | 34    | 34    | 21    |
| 9           | 13    | 12      | 9.6   | 8.9   | 8.7   | 9.7   | 14     | 296   | 360  | 31    | 21    | 21    |
| 10          | 13    | 11      | 9.2   | 8.9   | 8.3   | 9.6   | 14     | 338   | 255  | 29    | 17    | 20    |
| 11          | 13    | 11      | 9.7   | 9.0   | 8.7   | 9.4   | 14     | 326   | 206  | 29    | 15    | 20    |
| 12          | 9.3   | 11      | 9.7   | 9.2   | 8.7   | 9.1   | 14     | 465   | 174  | 44    | 14    | 19    |
| 13          | 11    | 12      | 9.6   | 9.5   | 9.1   | 9.6   | 13     | 476   | 151  | 47    | 13    | 17    |
| 14          | 11    | 13      | 9.6   | 9.2   | 9.1   | 10    | 14     | 461   | 142  | 33    | 12    | 15    |
| 15          | 11    | 14      | 9.6   | 9.0   | 9.1   | 9.7   | 18     | 424   | 133  | 27    | 11    | 15    |
| 16          | 11    | 13      | 9.6   | 8.5   | 9.1   | 10    | 22     | 527   | 152  | 26    | 19    | 15    |
| 17          | 12    | 12      | 9.3   | 8.5   | 9.1   | 10    | 28     | 575   | 147  | 26    | 14    | 15    |
| 18          | 12    | 12      | 9.0   | 8.7   | 8.7   | 10    | 35     | 508   | 133  | 39    | 11    | 14    |
| 19          | 13    | 12      | 9.0   | 8.9   | 8.7   | 10    | 40     | 402   | 122  | 27    | 8.7   | 13    |
| 20          | 13    | 12      | 9.4   | 8.6   | 8.7   | 10    | 38     | 442   | 113  | 24    | 7.4   | 13    |
| 21          | 14    | 12      | 9.5   | 8.6   | 8.7   | 9.5   | 35     | 452   | 107  | 23    | 7.4   | 13    |
| 22          | 15    | 12      | 9.6   | 8.6   | 9.1   | 9.7   | 36     | 347   | 100  | 24    | 12    | 12    |
| 23          | 16    | 11      | 9.6   | 8.9   | 8.7   | 9.8   | 41     | 283   | 94   | 22    | 11    | 12    |
| 24          | 17    | 12      | 9.7   | 9.1   | 8.7   | 10    | 54     | 289   | 85   | 20    | 8.3   | 14    |
| 25          | 17    | 11      | 9.6   | 9.3   | 8.7   | 10    | 66     | 278   | 75   | 19    | 8.3   | 14    |
| 26          | 16    | 11      | 9.7   | 9.4   | 8.7   | 10    | 79     | 248   | 69   | 19    | 8.3   | 14    |
| 27          | 16    | 12      | 9.7   | 9.4   | 8.6   | 9.9   | 96     | 235   | 63   | 33    | 8.3   | 13    |
| 28          | 15    | 12      | 9.7   | 9.4   | 8.6   | 9.4   | 120    | 208   | 58   | 38    | 8.3   | 12    |
| 29          | 15    | 12      | 9.7   | 9.3   | ---   | 8.9   | 151    | 193   | 62   | 52    | 8.7   | 11    |
| 30          | 14    | 11      | 9.7   | 9.1   | ---   | 8.6   | 156    | 202   | 63   | 51    | 8.3   | 11    |
| 31          | 14    | ---     | 9.1   | 9.0   | ---   | 8.9   | ---    | 220   | ---  | 73    | 8.7   | ---   |
| TOTAL       | 448.3 | 362     | 304.8 | 279.1 | 248.4 | 293.9 | 1188.3 | 9719  | 4745 | 1120  | 457.7 | 455.3 |
| MEAN        | 14.5  | 12.1    | 9.83  | 9.00  | 8.87  | 9.48  | 39.6   | 314   | 158  | 36.1  | 14.8  | 15.2  |
| MAX         | 23    | 14      | 11    | 9.5   | 9.3   | 10    | 156    | 575   | 436  | 73    | 34    | 23    |
| MIN         | 9.3   | 11      | 9.0   | 8.5   | 8.3   | 8.4   | 9.6    | 115   | 58   | 19    | 7.4   | 8.3   |
| AC-FT       | 889   | 718     | 605   | 554   | 493   | 583   | 2360   | 19280 | 9410 | 2220  | 908   | 903   |
| CAL YR 1986 | TOTAL | 38764.3 |       | MEAN  | 106   | MAX   | 1300   | MIN   | 6.4  | AC-FT | 76890 |       |
| WTR YR 1987 | TOTAL | 19621.8 |       | MEAN  | 53.8  | MAX   | 575    | MIN   | 7.4  | AC-FT | 38920 |       |



06634620 LITTLE MEDICINE BOW RIVER AT BOLES SPRING, NEAR MEDICINE BOW, WY

LOCATION.--Lat 41°57'40", long 106°12'31", in NW1/4 SW1/4 SW1/4 sec.17, T.23 N., R.78 W., Carbon County, Hydrologic Unit 10180005, on right bank 10 ft downstream from Boles Spring, 3.9 mi downstream from State Highway 487, 4.3 mi north of Medicine Bow, and 8.7 mi downstream from Muddy Creek.

DRAINAGE AREA.--969 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to current year. Records for October 1973 to September 1984 at site 5.5 mi upstream published as "near Medicine Bow" (sta 06634600) do not include flow of Boles Spring. Discharge records considered equivalent except for low flow.

GAGE.--Water-stage recorder. Elevation of gage is 6,570 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 3, 4, 9-13, Dec. 8-13, Feb. 16-20, 25, 27, 28, Mar. 1, 8-31, Apr. 1-4. Records fair except those for estimated daily discharges, which are poor. Diversions for irrigation of about 5,200 acres upstream from station.

AVERAGE DISCHARGE.--14 years, 60.3 ft<sup>3</sup>/s, 43,690 acre-ft/yr, unadjusted for flow from Boles Spring.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,500 ft<sup>3</sup>/s, May 17, 1978, from slope-area measurement of peak flow, gage height, 14.10 ft, from floodmark in gage well, site and datum then in use; no flow at times, 1974-84, site then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft<sup>3</sup>/s and maximum (\*):

| Date                                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|------------------------------------------------------------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| Apr. 5                                                     | 1430 | *1,000                         | *5.83            | No other peak greater than base discharge. |      |                                |                  |
| Minimum daily discharge, 0.51 ft <sup>3</sup> /s, Jan. 23. |      |                                |                  |                                            |      |                                |                  |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV      | DEC   | JAN   | FEB    | MAR    | APR   | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------------|-------|----------|-------|-------|--------|--------|-------|------|-------|-------|-------|-------|
| 1           | 13    | 15       | 16    | 3.3   | 1.1    | 8.4    | 26    | 95   | 43    | 14    | 7.4   | 4.1   |
| 2           | 17    | 15       | 19    | 3.2   | 1.3    | 8.8    | 32    | 90   | 35    | 12    | 5.1   | 3.6   |
| 3           | 23    | 14       | 17    | 3.0   | 1.3    | 9.4    | 41    | 87   | 28    | 11    | 3.8   | 3.0   |
| 4           | 22    | 15       | 15    | 2.9   | 1.4    | 9.8    | 60    | 79   | 24    | 35    | 2.9   | 3.4   |
| 5           | 19    | 16       | 15    | 3.1   | 1.1    | 17     | 479   | 73   | 22    | 21    | 2.6   | 5.0   |
| 6           | 19    | 14       | 14    | 3.2   | .98    | 29     | 585   | 65   | 19    | 13    | 3.0   | 5.9   |
| 7           | 18    | 7.9      | 13    | 3.5   | 1.0    | 38     | 492   | 57   | 18    | 8.1   | 4.6   | 6.0   |
| 8           | 16    | 3.5      | 11    | 3.5   | 1.1    | 67     | 430   | 50   | 16    | 6.6   | 5.6   | 5.9   |
| 9           | 15    | 3.1      | 9.8   | 3.1   | 1.3    | 130    | 458   | 44   | 189   | 6.1   | 5.3   | 5.1   |
| 10          | 14    | 2.8      | 12    | 2.6   | 1.2    | 230    | 284   | 40   | 128   | 5.4   | 5.1   | 4.2   |
| 11          | 17    | 3.4      | 14    | 2.3   | 1.0    | 193    | 161   | 39   | 71    | 5.3   | 4.5   | 3.9   |
| 12          | 15    | 3.8      | 15    | 2.2   | 1.0    | 160    | 151   | 41   | 52    | 6.1   | 4.2   | 3.5   |
| 13          | 16    | 4.3      | 17    | 2.4   | 1.6    | 180    | 143   | 49   | 42    | 6.6   | 4.0   | 3.2   |
| 14          | 19    | 5.2      | 18    | 2.2   | 3.0    | 215    | 86    | 34   | 31    | 6.1   | 4.1   | 2.9   |
| 15          | 17    | 6.3      | 17    | 1.7   | 5.1    | 275    | 64    | 37   | 24    | 5.3   | 4.5   | 3.6   |
| 16          | 15    | 6.7      | 15    | 1.3   | 6.6    | 210    | 76    | 37   | 23    | 4.7   | 5.6   | 3.8   |
| 17          | 14    | 7.2      | 15    | 1.1   | 8.0    | 148    | 127   | 80   | 18    | 4.3   | 5.5   | 3.8   |
| 18          | 14    | 17       | 13    | .76   | 8.5    | 130    | 136   | 43   | 15    | 4.8   | 4.7   | 4.0   |
| 19          | 14    | 24       | 12    | .63   | 8.8    | 110    | 166   | 36   | 13    | 5.0   | 4.1   | 3.9   |
| 20          | 14    | 22       | 11    | .76   | 9.2    | 86     | 189   | 33   | 11    | 4.9   | 3.6   | 4.0   |
| 21          | 15    | 26       | 11    | .67   | 9.7    | 68     | 129   | 41   | 10    | 4.3   | 2.7   | 4.2   |
| 22          | 24    | 23       | 9.3   | .55   | 9.8    | 53     | 89    | 43   | 8.5   | 4.1   | 3.5   | 3.9   |
| 23          | 21    | 14       | 8.1   | .51   | 10     | 41     | 92    | 41   | 7.7   | 3.7   | 5.6   | 3.8   |
| 24          | 18    | 18       | 6.6   | .63   | 9.4    | 36     | 108   | 39   | 7.1   | 3.8   | 5.8   | 3.5   |
| 25          | 18    | 21       | 5.4   | .73   | 9.3    | 31     | 124   | 51   | 6.8   | 3.8   | 5.9   | 4.1   |
| 26          | 17    | 16       | 4.5   | .97   | 9.1    | 26     | 124   | 77   | 6.7   | 3.5   | 5.8   | 4.5   |
| 27          | 15    | 16       | 4.5   | 1.2   | 8.5    | 23     | 124   | 65   | 6.4   | 3.3   | 7.4   | 4.7   |
| 28          | 14    | 19       | 4.6   | 1.3   | 8.0    | 19     | 126   | 62   | 5.8   | 3.3   | 6.7   | 4.7   |
| 29          | 14    | 19       | 4.3   | .87   | ---    | 16     | 123   | 68   | 9.4   | 3.3   | 6.1   | 5.0   |
| 30          | 14    | 18       | 4.3   | .94   | ---    | 18     | 108   | 58   | 21    | 18    | 5.1   | 5.1   |
| 31          | 14    | ---      | 3.9   | .99   | ---    | 21     | ---   | 50   | ---   | 12    | 4.5   | ---   |
| TOTAL       | 515   | 396.2    | 355.3 | 56.11 | 138.38 | 2606.4 | 5333  | 1704 | 911.4 | 248.4 | 149.3 | 126.3 |
| MEAN        | 16.6  | 13.2     | 11.5  | 1.81  | 4.94   | 84.1   | 178   | 55.0 | 30.4  | 8.01  | 4.82  | 4.21  |
| MAX         | 24    | 26       | 19    | 3.5   | 10     | 275    | 585   | 95   | 189   | 35    | 7.4   | 6.0   |
| MIN         | 13    | 2.8      | 3.9   | .51   | .98    | 8.4    | 26    | 33   | 5.8   | 3.3   | 2.6   | 2.9   |
| AC-FT       | 1020  | 786      | 705   | 111   | 274    | 5170   | 10580 | 3380 | 1810  | 493   | 296   | 251   |
| CAL YR 1986 | TOTAL | 24415.03 |       | MEAN  | 66.9   | MAX    | 691   | MIN  | .90   | AC-FT | 48430 |       |
| WTR YR 1987 | TOTAL | 12539.79 |       | MEAN  | 34.4   | MAX    | 585   | MIN  | .51   | AC-FT | 24870 |       |

06634620 LITTLE MEDICINE BOW RIVER AT BOLES SPRING, NEAR MEDICINE BOW, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1985 to current year.

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>NATURAL<br>DIS-<br>SOLVED<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| NOV<br>03... | 0945 | 14                                              | 0.0                                  | 4.1                                                 | 170                                                        | 0.4                                                        | 34                                                          | 4.1                                                         | 25                                                             | 4.2                                                            | 3.7                                                             | 110                                                    |
| JAN<br>14... | 1030 | 2.3                                             | 5.0                                  | 4.7                                                 | 63                                                         | 0.6                                                        | 17                                                          | 6.4                                                         | 12                                                             | 6.2                                                            | 0.9                                                             | 62                                                     |
| MAY<br>12... | 1000 | 40                                              | 15.0                                 | --                                                  | 26                                                         | --                                                         | --                                                          | --                                                          | 21                                                             | --                                                             | 0.4                                                             | 62                                                     |
| AUG<br>14... | 1515 | 4.1                                             | 17.0                                 | --                                                  | 31                                                         | --                                                         | --                                                          | --                                                          | 17                                                             | --                                                             | 0.3                                                             | 60                                                     |

## PLATTE RIVER BASIN

06635000 MEDICINE BOW RIVER ABOVE SEMINOLE RESERVOIR, NEAR HANNA, WY

LOCATION.--Lat 42°00'35", long 106°30'45", in SE1/4 NW1/4 sec.34, T.24 N., R.81 W., Carbon County, Hydrologic Unit 10180004, on left bank 25 ft upstream from county highway bridge, 2.0 mi upstream from Troublesome Creek, 9.0 mi upstream from high-water line of Seminole Reservoir at elevation 6,357 ft, and 10 mi north of Hanna.

DRAINAGE AREA.--2,338 mi<sup>2</sup>, of which 396 mi<sup>2</sup> is probably noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1939 to current year.

REVISED RECORDS.--WSP 956: 1941(M). WSP 1440: 1940(M), 1941. WSP 1710: Drainage area. WDR WY-83-1: 1943.

GAGE.--Water-stage recorder. Datum of gage is 6,415.40 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 8 to Mar. 12, and Mar. 21 to Apr. 2. Records good except those for estimated daily discharges, which are poor. Many small reservoirs upstream from station, total capacity, about 6,000 acre-ft, for irrigation. Diversions for irrigation of about 43,000 acres upstream from station.

COOPERATION.--Eight discharge measurements provided by the Bureau of Reclamation, and nine discharge measurements provided by the Wyoming State Engineer's office.

AVERAGE DISCHARGE.--48 years, 189 ft<sup>3</sup>/s, 136,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,010 ft<sup>3</sup>/s, May 12, 1973, gage height, 6.74 ft; maximum gage height, about 8.2 ft, Feb. 26 or 27, 1986, from floodmark (backwater from ice); minimum daily discharge, 1.1 ft<sup>3</sup>/s, Sept. 7-14, 1959, Aug. 7, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 921 ft<sup>3</sup>/s, Apr. 7, gage height, 2.70 ft; maximum gage height, 3.64 ft, Mar. 10 (backwater from ice); minimum daily discharge, 14 ft<sup>3</sup>/s, Aug. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR   | APR   | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|-------|------|------|------|-------|-------|-------|-------|-------|--------|------|
| 1           | 57    | 80    | 80   | 26   | 32   | 40    | 90    | 369   | 255   | 54    | 81     | 24   |
| 2           | 80    | 80    | 74   | 25   | 34   | 50    | 95    | 343   | 223   | 49    | 73     | 21   |
| 3           | 100   | 82    | 70   | 25   | 37   | 56    | 100   | 380   | 180   | 47    | 57     | 20   |
| 4           | 97    | 80    | 72   | 25   | 39   | 75    | 115   | 380   | 152   | 47    | 45     | 23   |
| 5           | 94    | 77    | 74   | 25   | 40   | 100   | 141   | 333   | 135   | 62    | 38     | 26   |
| 6           | 91    | 80    | 76   | 26   | 38   | 210   | 708   | 308   | 122   | 54    | 40     | 21   |
| 7           | 91    | 73    | 72   | 23   | 36   | 250   | 684   | 294   | 119   | 42    | 38     | 20   |
| 8           | 91    | 55    | 68   | 20   | 35   | 300   | 641   | 294   | 112   | 36    | 42     | 20   |
| 9           | 85    | 45    | 50   | 17   | 37   | 350   | 587   | 294   | 155   | 32    | 40     | 19   |
| 10          | 80    | 40    | 40   | 18   | 40   | 425   | 621   | 294   | 362   | 31    | 36     | 17   |
| 11          | 82    | 36    | 45   | 18   | 40   | 500   | 398   | 284   | 551   | 29    | 33     | 17   |
| 12          | 80    | 40    | 50   | 19   | 38   | 350   | 304   | 303   | 534   | 29    | 38     | 16   |
| 13          | 82    | 39    | 56   | 19   | 40   | 300   | 303   | 343   | 425   | 33    | 32     | 16   |
| 14          | 91    | 45    | 62   | 19   | 43   | 338   | 257   | 447   | 290   | 31    | 23     | 15   |
| 15          | 88    | 50    | 60   | 17   | 40   | 407   | 204   | 392   | 220   | 27    | 21     | 17   |
| 16          | 82    | 60    | 58   | 15   | 38   | 369   | 173   | 385   | 176   | 26    | 26     | 19   |
| 17          | 82    | 66    | 56   | 16   | 34   | 290   | 199   | 408   | 145   | 29    | 21     | 19   |
| 18          | 77    | 70    | 55   | 16   | 36   | 192   | 247   | 448   | 125   | 36    | 19     | 19   |
| 19          | 73    | 90    | 52   | 16   | 35   | 173   | 271   | 459   | 112   | 31    | 16     | 17   |
| 20          | 73    | 100   | 50   | 16   | 34   | 155   | 299   | 526   | 94    | 29    | 14     | 16   |
| 21          | 73    | 95    | 45   | 16   | 33   | 120   | 313   | 547   | 82    | 27    | 14     | 16   |
| 22          | 77    | 110   | 42   | 17   | 35   | 100   | 266   | 540   | 73    | 31    | 30     | 17   |
| 23          | 82    | 100   | 39   | 18   | 38   | 95    | 223   | 573   | 68    | 29    | 20     | 17   |
| 24          | 88    | 90    | 37   | 20   | 42   | 100   | 253   | 566   | 65    | 26    | 19     | 17   |
| 25          | 91    | 86    | 33   | 22   | 40   | 105   | 275   | 516   | 59    | 24    | 20     | 17   |
| 26          | 94    | 90    | 31   | 24   | 39   | 110   | 294   | 443   | 54    | 23    | 19     | 15   |
| 27          | 91    | 84    | 28   | 31   | 37   | 105   | 313   | 459   | 47    | 27    | 26     | 16   |
| 28          | 88    | 84    | 27   | 34   | 35   | 100   | 328   | 421   | 40    | 37    | 23     | 17   |
| 29          | 80    | 88    | 27   | 35   | ---  | 85    | 348   | 408   | 45    | 44    | 26     | 17   |
| 30          | 77    | 88    | 27   | 30   | ---  | 80    | 353   | 364   | 47    | 27    | 24     | 19   |
| 31          | 77    | ---   | 27   | 31   | ---  | 86    | ---   | 304   | ---   | 59    | 24     | ---  |
| TOTAL       | 2594  | 2203  | 1583 | 679  | 1045 | 6016  | 9403  | 12425 | 5067  | 1108  | 978    | 550  |
| MEAN        | 83.7  | 73.4  | 51.1 | 21.9 | 37.3 | 194   | 313   | 401   | 169   | 35.7  | 31.5   | 18.3 |
| MAX         | 100   | 110   | 80   | 35   | 43   | 500   | 708   | 573   | 551   | 62    | 81     | 26   |
| MIN         | 57    | 36    | 27   | 15   | 32   | 40    | 90    | 284   | 40    | 23    | 14     | 15   |
| AC-FT       | 5150  | 4370  | 3140 | 1350 | 2070 | 11930 | 18650 | 24640 | 10050 | 2200  | 1940   | 1090 |
| CAL YR 1986 | TOTAL | 96464 |      | MEAN | 264  | MAX   | 3470  | MIN   | 26    | AC-FT | 191300 |      |
| WTR YR 1987 | TOTAL | 43651 |      | MEAN | 120  | MAX   | 708   | MIN   | 14    | AC-FT | 86580  |      |

06635000 MEDICINE BOW RIVER ABOVE SEMINOLE RESERVOIR, NEAR HANNA, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>NATURAL<br>DIS-<br>SOLVED<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| AUG<br>26... | 1345 | 33                                              | 20.5                                 | --                                                  | 43                                                         | <0.4                                                       | 22                                                          | 1.8                                                         | 14                                                             | 1.8                                                            | 0.2                                                             | 29                                                     |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>NATURAL<br>DIS-<br>SOLVED<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| NOV<br>03... | 1345 | 80                                              | 2.0                                  | 3.2                                                 | 40                                                         | 0.6                                                        | 15                                                          | 0.5                                                         | 9.8                                                            | 0.5                                                            | 0.2                                                             | 31                                                     |
| JAN<br>26... | 0930 | 24                                              | 0.0                                  | 3.2                                                 | 36                                                         | 1.6                                                        | 6.7                                                         | 7.4                                                         | 4.4                                                            | 7.1                                                            | 0.3                                                             | 29                                                     |
| MAY<br>12... | 1320 | 304                                             | 12.0                                 | --                                                  | <5.0                                                       | --                                                         | --                                                          | --                                                          | 7.5                                                            | --                                                             | 0.3                                                             | 8.0                                                    |
| AUG<br>14... | 1230 | 22                                              | 18.0                                 | --                                                  | 14                                                         | --                                                         | --                                                          | --                                                          | 11                                                             | --                                                             | 0.2                                                             | 22                                                     |

## 06635500 SEMINOE RESERVOIR NEAR LEO, WY

LOCATION.--Lat 42°09'21", long 106°54'29", in NW1/4 NE1/4 sec.8, T.25 N., R.84 W., Carbon County, Hydrologic Unit 10180003, on upstream side near center of dam on North Platte River, 6.0 mi upstream from high-water line of Pathfinder Reservoir at elevation 5,850.1 ft, and 9.0 mi southwest of Leo.

DRAINAGE AREA.--7,230 mi<sup>2</sup>, of which 589 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--February 1939 to current year. Monthend figures only for February, March 1939, October 1940 to September 1950, published in WSP 1310.

REVISED RECORDS.--WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,190.00 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Apr. 20, 1939, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete-arch dam. Storage began Apr. 1, 1939, but some regulation for power development during period Jan. 1 to Mar. 31, 1939. Capacity, 1,017,000 acre-ft below elevation 6,357 ft, top of spillway gates. Figures given herein represent total contents, of which 31,700 acre-ft, capacity below elevation 6,239 ft, minimum operating level for power development, are not available for power development and 533 acre-ft, below elevation 6,185.09 ft, penstock invert, is dead storage. Water is used for irrigation and power development.

COOPERATION.--Records provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 1,073,000 acre-ft, June 20, 1949, elevation, 6,359.29 ft; minimum daily (since appreciable storage was attained), 19,040 acre-ft, Sept. 1, 1939, elevation, 6,228.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 859,000 acre-ft, June 17, elevation, 6,348.67 ft; minimum daily contents, 623,000 acre-ft, Mar. 4-6, elevation, 6,333.60 ft, Mar. 6.

Capacity table (elevation, in feet,  
and contents, in acre-feet)

|       |         |       |         |
|-------|---------|-------|---------|
| 6,320 | 458,000 | 6,340 | 716,000 |
| 6,330 | 575,000 | 6,350 | 883,000 |

CORRECTION.--The change in contents, in acre-feet, for June 1986 has been corrected to +299,000 instead of +229,000 as published in the report for 1986.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT      | NOV      | DEC      | JAN      | FEB      | MAR      | APR      | MAY      | JUN      | JUL      | AUG      | SEP      |
|-----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1   | 811000   | 796000   | 782000   | 733000   | 672000   | 626000   | 648000   | 729000   | 834000   | 834000   | 770000   | 700000   |
| 2   | 811000   | 796000   | 780000   | 732000   | 674000   | 625000   | 648000   | 733000   | 835000   | 832000   | 767000   | 698000   |
| 3   | 812000   | 795000   | 779000   | 731000   | 667000   | 624000   | 649000   | 739000   | 836000   | 831000   | 764000   | 696000   |
| 4   | 811000   | 794000   | 779000   | 728000   | 665000   | 623000   | 650000   | 743000   | 837000   | 829000   | 761000   | 693000   |
| 5   | 811000   | 793000   | 778000   | 726000   | 663000   | 623000   | 651000   | 746000   | 837000   | 828000   | 759000   | 692000   |
| 6   | 812000   | 792000   | 777000   | 725000   | 662000   | 623000   | 653000   | 750000   | 838000   | 826000   | 756000   | 690000   |
| 7   | 812000   | 793000   | 778000   | 723000   | 660000   | 624000   | 656000   | 753000   | 838000   | 824000   | 755000   | 685000   |
| 8   | 811000   | 793000   | 776000   | 721000   | 659000   | 625000   | 658000   | 756000   | 840000   | 822000   | 753000   | 687000   |
| 9   | 811000   | 791000   | 776000   | 719000   | 657000   | 626000   | 660000   | 758000   | 842000   | 820000   | 751000   | 686000   |
| 10  | 809000   | 791000   | 774000   | 717000   | 653000   | 628000   | 664000   | 760000   | 844000   | 817000   | 749000   | 684000   |
| 11  | 809000   | 789000   | 772000   | 715000   | 651000   | 630000   | 666000   | 763000   | 849000   | 814000   | 747000   | 682000   |
| 12  | 809000   | 787000   | 770000   | 713000   | 649000   | 631000   | 668000   | 766000   | 851000   | 812000   | 745000   | 680000   |
| 13  | 808000   | 787000   | 769000   | 710000   | 647000   | 633000   | 670000   | 769000   | 854000   | 809000   | 743000   | 679000   |
| 14  | 807000   | 786000   | 769000   | 708000   | 645000   | 634000   | 672000   | 772000   | 855000   | 807000   | 740000   | 678000   |
| 15  | 807000   | 785000   | 768000   | 706000   | 644000   | 635000   | 672000   | 776000   | 856000   | 806000   | 738000   | 676000   |
| 16  | 806000   | 785000   | 765000   | 704000   | 641000   | 637000   | 675000   | 779000   | 858000   | 803000   | 736000   | 675000   |
| 17  | 805000   | 784000   | 763000   | 702000   | 638000   | 638000   | 676000   | 783000   | 859000   | 801000   | 733000   | 674000   |
| 18  | 804000   | 784000   | 761000   | 701000   | 636000   | 640000   | 679000   | 787000   | 858000   | 799000   | 731000   | 672000   |
| 19  | 804000   | 785000   | 759000   | 699000   | 633000   | 640000   | 681000   | 791000   | 855000   | 798000   | 728000   | 671000   |
| 20  | 803000   | 785000   | 757000   | 696000   | 632000   | 642000   | 686000   | 795000   | 854000   | 797000   | 727000   | 670000   |
| 21  | 803000   | 784000   | 756000   | 694000   | 632000   | 643000   | 690000   | 799000   | 853000   | 795000   | 724000   | 669000   |
| 22  | 803000   | 783000   | 754000   | 692000   | 631000   | 643000   | 693000   | 803000   | 850000   | 793000   | 722000   | 667000   |
| 23  | 802000   | 784000   | 751000   | 690000   | 630000   | 644000   | 695000   | 808000   | 850000   | 791000   | 719000   | 666000   |
| 24  | 801000   | 784000   | 749000   | 688000   | 628000   | 645000   | 698000   | 812000   | 847000   | 788000   | 718000   | 665000   |
| 25  | 801000   | 782000   | 748000   | 687000   | 628000   | 645000   | 702000   | 817000   | 845000   | 787000   | 716000   | 664000   |
| 26  | 801000   | 783000   | 744000   | 684000   | 628000   | 646000   | 706000   | 820000   | 843000   | 786000   | 714000   | 663000   |
| 27  | 800000   | 782000   | 743000   | 683000   | 628000   | 646000   | 710000   | 823000   | 841000   | 784000   | 712000   | 663000   |
| 28  | 799000   | 782000   | 742000   | 681000   | 627000   | 646000   | 713000   | 825000   | 840000   | 782000   | 710000   | 662000   |
| 29  | 799000   | 781000   | 740000   | 679000   | ---      | 647000   | 718000   | 828000   | 838000   | 779000   | 707000   | 661000   |
| 30  | 797000   | 782000   | 738000   | 677000   | ---      | 647000   | 723000   | 831000   | 836000   | 776000   | 705000   | 660000   |
| 31  | 796000   | ---      | 735000   | 674000   | ---      | 647000   | ---      | 832000   | ---      | 773000   | 702000   | ---      |
| MAX | 812000   | 796000   | 782000   | 733000   | 674000   | 647000   | 723000   | 832000   | 859000   | 834000   | 770000   | 700000   |
| MIN | 796000   | 781000   | 735000   | 674000   | 627000   | 623000   | 648000   | 729000   | 834000   | 773000   | 702000   | 660000   |
| (†) | 6,345.05 | 6,344.20 | 6,341.27 | 6,337.22 | 6,333.92 | 6,335.32 | 6,340.50 | 6,347.15 | 6,347.37 | 6,343.62 | 6,339.10 | 6,336.25 |
| (‡) | -14,000  | -14,000  | -47,000  | -61,000  | -47,000  | +20,000  | +76,000  | +109,000 | +4,000   | -63,000  | -71,000  | -42,000  |

GAL YR 1986 MAX 957000 MIN 481000 (†) +36,000  
WTR YR 1987 MAX 859000 MIN 623000 (‡) -150,000  
(†) Elevation, in feet, at end of month.  
(‡) Change in contents, in acre-feet.

## 06637750 ROCK CREEK ABOVE ROCK CREEK RESERVOIR, WY

LOCATION.--Lat 42°32'59", long 108°46'26", in NW1/4 NW1/4 sec.27, T.30 N., R.100 W., Fremont County, Hydrologic Unit 10180006, Shoshone National Forest, on left bank 200 ft upstream from high-water line of Rock Creek Reservoir, 2.7 mi downstream from Little Rock Creek, and 4.3 mi northwest of Atlantic City.

DRAINAGE AREA.--9.2 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--May 1962 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 8,330 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 28, 29, Oct. 31 to Nov. 2, Nov. 4-6, 8, Dec. 19 to Apr. 24, and May 4 to July 8. Records good except those for January to June, which are poor. No diversions upstream from station.

AVERAGE DISCHARGE.--25 years, 8.84 ft<sup>3</sup>/s, 6,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 218 ft<sup>3</sup>/s, June 1, 1986, gage height, 7.17 ft; maximum gage height, 8.54 ft, Apr. 22, 1965 (backwater from ice); minimum daily discharge, 0.5 ft<sup>3</sup>/s, Jan. 12-14, 1963, Feb. 1, 1985.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 70 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time    | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|---------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| May 18 | Unknown | *70                            | a*6.37           | No other peak greater than base discharge. |      |                                |                  |

a-From floodmarks.

Minimum daily discharge, 0.56 ft<sup>3</sup>/s, Mar. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN  | FEB   | MAR   | APR    | MAY  | JUN   | JUL   | AUG   | SEP  |
|-------------|-------|---------|------|------|-------|-------|--------|------|-------|-------|-------|------|
| 1           | 3.1   | 2.9     | 2.3  | 1.2  | 1.2   | .86   | .72    | 43   | 20    | 9.0   | 2.9   | 2.2  |
| 2           | 2.9   | 2.9     | 2.3  | 1.2  | 1.2   | .86   | .80    | 38   | 19    | 8.4   | 2.8   | 2.2  |
| 3           | 3.4   | 2.9     | 2.2  | 1.2  | 1.2   | .86   | .96    | 35   | 17    | 7.8   | 2.7   | 2.2  |
| 4           | 3.7   | 3.2     | 2.2  | 1.3  | 1.2   | .86   | 1.1    | 35   | 17    | 7.4   | 2.6   | 3.5  |
| 5           | 3.7   | 3.2     | 2.2  | 1.4  | 1.2   | .86   | 1.5    | 30   | 18    | 7.0   | 2.5   | 2.5  |
| 6           | 4.2   | 3.2     | 2.3  | 1.4  | 1.2   | .90   | 2.2    | 35   | 20    | 6.6   | 2.5   | 2.4  |
| 7           | 4.6   | 3.2     | 2.3  | 1.3  | 1.2   | .90   | 2.7    | 40   | 23    | 6.0   | 3.4   | 2.3  |
| 8           | 4.1   | 3.1     | 2.2  | 1.2  | 1.2   | .90   | 3.0    | 43   | 26    | 5.4   | 3.1   | 2.2  |
| 9           | 4.0   | 3.1     | 2.2  | 1.2  | 1.2   | .84   | 3.0    | 45   | 31    | 5.4   | 2.7   | 2.2  |
| 10          | 3.8   | 2.6     | 2.2  | 1.2  | 1.2   | .80   | 2.9    | 45   | 29    | 11    | 2.6   | 2.2  |
| 11          | 3.0   | 2.6     | 2.2  | 1.2  | 1.0   | .76   | 2.9    | 44   | 26    | 12    | 2.5   | 2.2  |
| 12          | 3.1   | 2.5     | 2.2  | 1.3  | 1.0   | .74   | 2.8    | 47   | 23    | 6.9   | 2.4   | 2.1  |
| 13          | 3.3   | 2.5     | 2.2  | 1.3  | 1.0   | .72   | 2.7    | 48   | 21    | 6.3   | 2.4   | 2.1  |
| 14          | 4.0   | 2.5     | 2.1  | 1.3  | 1.0   | .70   | 3.4    | 48   | 19    | 5.3   | 2.7   | 2.1  |
| 15          | 4.2   | 2.5     | 2.1  | 1.2  | 1.0   | .68   | 4.5    | 53   | 18    | 4.7   | 4.4   | 2.1  |
| 16          | 3.6   | 2.5     | 2.1  | 1.1  | 1.0   | .66   | 6.6    | 56   | 20    | 4.6   | 3.2   | 2.1  |
| 17          | 3.8   | 2.5     | 2.0  | 1.1  | 1.0   | .64   | 8.0    | 60   | 18    | 8.3   | 2.6   | 2.1  |
| 18          | 3.1   | 2.6     | 1.9  | 1.1  | 1.0   | .62   | 10     | 62   | 17    | 7.1   | 2.5   | 2.0  |
| 19          | 3.3   | 2.7     | 1.9  | 1.1  | 1.0   | .62   | 9.0    | 56   | 15    | 5.1   | 2.4   | 2.1  |
| 20          | 4.1   | 2.6     | 1.8  | 1.1  | 1.1   | .60   | 6.9    | 48   | 13    | 4.4   | 2.3   | 2.0  |
| 21          | 3.8   | 2.5     | 1.8  | 1.2  | 1.1   | .58   | 8.0    | 43   | 12    | 4.3   | 2.3   | 2.0  |
| 22          | 3.9   | 2.4     | 1.8  | 1.2  | 1.1   | .58   | 10     | 38   | 11    | 4.6   | 2.5   | 2.0  |
| 23          | 4.0   | 2.6     | 1.9  | 1.2  | 1.1   | .58   | 13     | 35   | 10    | 3.9   | 2.4   | 1.9  |
| 24          | 3.9   | 2.6     | 1.7  | 1.3  | 1.1   | .58   | 17     | 33   | 9.0   | 3.6   | 4.2   | 1.9  |
| 25          | 4.1   | 2.4     | 1.6  | 1.3  | 1.0   | .58   | 25     | 31   | 8.0   | 3.5   | 3.5   | 1.9  |
| 26          | 3.9   | 2.2     | 1.5  | 1.3  | .90   | .58   | 26     | 28   | 7.1   | 3.5   | 2.7   | 1.9  |
| 27          | 3.9   | 2.2     | 1.5  | 1.3  | .86   | .58   | 30     | 25   | 7.1   | 3.4   | 2.6   | 1.9  |
| 28          | 3.9   | 2.3     | 1.5  | 1.3  | .86   | .56   | 33     | 23   | 7.2   | 3.2   | 2.5   | 1.9  |
| 29          | 3.5   | 2.3     | 1.4  | 1.2  | ---   | .60   | 37     | 23   | 8.2   | 3.4   | 2.4   | 1.9  |
| 30          | 3.5   | 2.3     | 1.3  | 1.1  | ---   | .62   | 43     | 24   | 9.6   | 3.2   | 2.4   | 1.9  |
| 31          | 3.2   | ---     | 1.3  | 1.2  | ---   | .66   | ---    | 23   | ---   | 3.1   | 2.3   | ---  |
| TOTAL       | 114.6 | 79.6    | 60.2 | 38.0 | 30.12 | 21.88 | 317.68 | 1237 | 499.2 | 178.4 | 85.0  | 64.0 |
| MEAN        | 3.70  | 2.65    | 1.94 | 1.23 | 1.08  | .71   | 10.6   | 39.9 | 16.6  | 5.75  | 2.74  | 2.13 |
| MAX         | 4.6   | 3.2     | 2.3  | 1.4  | 1.2   | .90   | 43     | 62   | 31    | 12    | 4.4   | 3.5  |
| MIN         | 2.9   | 2.2     | 1.3  | 1.1  | .86   | .56   | .72    | 23   | 7.1   | 3.1   | 2.3   | 1.9  |
| AC-FT       | 227   | 158     | 119  | 75   | 60    | 43    | 630    | 2450 | 990   | 354   | 169   | 127  |
| CAL YR 1986 | TOTAL | 5775.7  |      | MEAN | 15.8  | MAX   | 175    | MIN  | 1.2   | AC-FT | 11460 |      |
| WTR YR 1987 | TOTAL | 2725.68 |      | MEAN | 7.47  | MAX   | 62     | MIN  | .56   | AC-FT | 5410  |      |



## 06638090 SWEETWATER RIVER NEAR SWEETWATER STATION, WY

LOCATION.--Lat 42°30'17", long 108°14'59", in SW1/4 SE1/4 NE1/4 sec.12, T.29 N., R.96 W., Fremont County, Hydrologic Unit 10180006, on left bank 1.4 mi downstream from Alkali Creek and 4.4 mi southwest of Sweetwater Station.

DRAINAGE AREA.--849 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1973 to current year.

REVISED RECORDS.--WDR WY-85-1: 1984(M).

GAGE.--Water-stage recorder. Elevation of gage is 6,590 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 5 to Apr. 1. Records good except those for estimated daily discharges, which are poor. Transbasin diversion by Continental Divide ditch diverts water from Little Sandy Creek to land along Lander Creek (tributary to Sweetwater River). A transbasin diversion diverts water from Sweetwater River into Pacific Creek (tributary to Big Sandy River in Green River basin).

AVERAGE DISCHARGE.--14 years, 147 ft<sup>3</sup>/s, 106,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,750 ft<sup>3</sup>/s, Apr. 24, 1980, gage height, 12.40 ft, from floodmark; minimum daily, 5.6 ft<sup>3</sup>/s, Jan. 9, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| Apr. 18 | 0700 | *1,040                         | *6.13            | No other peak greater than base discharge. |      |                                |                  |

Minimum daily discharge, 17 ft<sup>3</sup>/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL    | AUG  | SEP  |
|-------------|-------|-------|------|------|------|------|-------|-------|-------|--------|------|------|
| 1           | 53    | 61    | 42   | 24   | 27   | 45   | 150   | 282   | 265   | 76     | 35   | 25   |
| 2           | 53    | 56    | 41   | 25   | 30   | 60   | 184   | 303   | 228   | 77     | 34   | 24   |
| 3           | 55    | 48    | 40   | 26   | 32   | 70   | 285   | 307   | 203   | 71     | 32   | 22   |
| 4           | 57    | 46    | 38   | 26   | 34   | 80   | 576   | 275   | 189   | 62     | 30   | 25   |
| 5           | 58    | 45    | 36   | 27   | 36   | 90   | 564   | 250   | 178   | 57     | 28   | 26   |
| 6           | 57    | 42    | 34   | 27   | 37   | 100  | 564   | 233   | 178   | 54     | 28   | 29   |
| 7           | 58    | 40    | 33   | 27   | 39   | 110  | 510   | 235   | 188   | 50     | 29   | 33   |
| 8           | 58    | 37    | 31   | 25   | 39   | 120  | 484   | 239   | 248   | 47     | 29   | 30   |
| 9           | 56    | 33    | 30   | 22   | 40   | 120  | 613   | 238   | 340   | 44     | 30   | 28   |
| 10          | 56    | 30    | 28   | 20   | 40   | 110  | 461   | 238   | 324   | 42     | 30   | 26   |
| 11          | 56    | 25    | 29   | 19   | 42   | 110  | 461   | 237   | 338   | 48     | 28   | 26   |
| 12          | 50    | 27    | 30   | 19   | 42   | 110  | 489   | 274   | 278   | 91     | 27   | 26   |
| 13          | 46    | 35    | 30   | 19   | 43   | 110  | 358   | 268   | 230   | 97     | 25   | 24   |
| 14          | 47    | 44    | 30   | 19   | 44   | 120  | 270   | 256   | 208   | 73     | 24   | 23   |
| 15          | 53    | 45    | 30   | 18   | 45   | 120  | 350   | 248   | 191   | 58     | 27   | 23   |
| 16          | 54    | 47    | 31   | 17   | 46   | 120  | 596   | 255   | 176   | 51     | 30   | 23   |
| 17          | 51    | 48    | 31   | 18   | 47   | 120  | 825   | 267   | 169   | 47     | 34   | 23   |
| 18          | 48    | 49    | 30   | 19   | 48   | 120  | 886   | 302   | 160   | 56     | 35   | 23   |
| 19          | 47    | 50    | 30   | 19   | 48   | 120  | 714   | 349   | 145   | 83     | 30   | 23   |
| 20          | 47    | 50    | 30   | 19   | 49   | 110  | 439   | 374   | 131   | 87     | 25   | 23   |
| 21          | 50    | 50    | 29   | 19   | 49   | 110  | 271   | 334   | 121   | 65     | 23   | 23   |
| 22          | 60    | 50    | 29   | 20   | 49   | 110  | 272   | 380   | 113   | 55     | 23   | 23   |
| 23          | 77    | 50    | 29   | 21   | 48   | 110  | 312   | 335   | 104   | 52     | 26   | 23   |
| 24          | 87    | 50    | 28   | 23   | 48   | 100  | 351   | 282   | 99    | 50     | 34   | 23   |
| 25          | 87    | 49    | 28   | 25   | 47   | 100  | 325   | 283   | 92    | 44     | 34   | 23   |
| 26          | 77    | 48    | 27   | 27   | 46   | 100  | 307   | 269   | 85    | 40     | 35   | 22   |
| 27          | 69    | 47    | 27   | 27   | 45   | 100  | 308   | 251   | 79    | 39     | 38   | 21   |
| 28          | 65    | 46    | 26   | 27   | 43   | 98   | 290   | 259   | 72    | 38     | 35   | 21   |
| 29          | 62    | 44    | 26   | 27   | ---  | 95   | 286   | 338   | 71    | 37     | 32   | 21   |
| 30          | 62    | 43    | 25   | 27   | ---  | 110  | 284   | 361   | 70    | 36     | 29   | 22   |
| 31          | 62    | ---   | 25   | 25   | ---  | 130  | ---   | 314   | ---   | 36     | 27   | ---  |
| TOTAL       | 1818  | 1335  | 953  | 703  | 1183 | 3228 | 12785 | 8836  | 5273  | 1763   | 926  | 727  |
| MEAN        | 58.6  | 44.5  | 30.7 | 22.7 | 42.3 | 104  | 426   | 285   | 176   | 56.9   | 29.9 | 24.2 |
| MAX         | 87    | 61    | 42   | 27   | 49   | 130  | 886   | 380   | 340   | 97     | 38   | 33   |
| MIN         | 46    | 25    | 25   | 17   | 27   | 45   | 150   | 233   | 70    | 36     | 23   | 21   |
| AC-FT       | 3610  | 2650  | 1890 | 1390 | 2350 | 6400 | 25360 | 17530 | 10460 | 3500   | 1840 | 1440 |
| CAL YR 1986 | TOTAL | 86182 | MEAN | 236  | MAX  | 1760 | MIN   | 18    | AC-FT | 170900 |      |      |
| WTR YR 1987 | TOTAL | 39530 | MEAN | 108  | MAX  | 886  | MIN   | 17    | AC-FT | 78410  |      |      |

## 06639000 SWEETWATER RIVER NEAR ALCOVA, WY

LOCATION.--Lat 42°27'28", long 107°11'45", in SW1/4 NE 1/4 sec.25, T.29 N., R.87 W., Natrona County, Hydrologic Unit 10180006, on left bank at Dumbell Ranch, 1.0 mi downstream from Schounmaker ditch diversion dam, 13 mi upstream from high-water line of Pathfinder Reservoir at elevation 5,850 ft, and 25 mi southwest of Alcova.

DRAINAGE AREA.--2,327 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1913 to September 1924, October 1938 to current year (no winter records during 1974, 1975, 1977-81, and since 1983). Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1921, 1923-24. WSP 1710: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,920 ft above National Geodetic Vertical Datum of 1929, from topographic map. Aug. 28, 1913, to Sept. 30, 1924, nonrecording gages at site 0.4 mi upstream at different datums.

REMARKS.--No estimated daily discharges. Records good. Several small reservoirs upstream from station, combined capacity, about 5,000 acre-ft, for irrigation. Diversions for irrigation of about 24,000 acres upstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--48 years (water years 1914-24, 1939-73, 1976, 1982), 126 ft<sup>3</sup>/s, 91,290 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 4,290 ft<sup>3</sup>/s, Apr. 13, 1924; maximum gage height, 9.90 ft, Apr. 27, 1983; minimum daily discharge, 0.5 ft<sup>3</sup>/s, July 30 to Aug. 12, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 852 ft<sup>3</sup>/s, Apr. 21, gage height, 5.57 ft; minimum daily during period of operation, 14 ft<sup>3</sup>/s, Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|-------|-------|------|------|------|------|
| 1     |     |     |     |     |     |     | 100   | 326   | 255  | 59   | 51   | 20   |
| 2     |     |     |     |     |     |     | 100   | 326   | 239  | 59   | 51   | 19   |
| 3     |     |     |     |     |     |     | 92    | 304   | 208  | 61   | 49   | 18   |
| 4     |     |     |     |     |     |     | 90    | 293   | 190  | 63   | 45   | 19   |
| 5     |     |     |     |     |     |     | 96    | 290   | 173  | 61   | 45   | 19   |
| 6     |     |     |     |     |     |     | 208   | 285   | 160  | 59   | 43   | 20   |
| 7     |     |     |     |     |     |     | 429   | 263   | 151  | 57   | 45   | 20   |
| 8     |     |     |     |     |     |     | 562   | 247   | 144  | 55   | 47   | 32   |
| 9     |     |     |     |     |     |     | 649   | 231   | 178  | 53   | 45   | 39   |
| 10    |     |     |     |     |     |     | 679   | 216   | 247  | 53   | 43   | 41   |
| 11    |     |     |     |     |     |     | 753   | 205   | 213  | 55   | 41   | 43   |
| 12    |     |     |     |     |     |     | 760   | 198   | 223  | 55   | 41   | 45   |
| 13    |     |     |     |     |     |     | 662   | 195   | 216  | 49   | 39   | 45   |
| 14    |     |     |     |     |     |     | 729   | 188   | 208  | 43   | 39   | 43   |
| 15    |     |     |     |     |     |     | 536   | 195   | 182  | 41   | 39   | 45   |
| 16    |     |     |     |     |     |     | 399   | 188   | 156  | 49   | 38   | 45   |
| 17    |     |     |     |     |     |     | 435   | 193   | 134  | 51   | 38   | 47   |
| 18    |     |     |     |     |     |     | 603   | 200   | 123  | 49   | 36   | 45   |
| 19    |     |     |     |     |     |     | 662   | 216   | 112  | 45   | 34   | 45   |
| 20    |     |     |     |     |     |     | 770   | 210   | 100  | 41   | 32   | 45   |
| 21    |     |     |     |     |     |     | 833   | 213   | 88   | 41   | 32   | 45   |
| 22    |     |     |     |     |     |     | 746   | 266   | 81   | 43   | 34   | 43   |
| 23    |     |     |     |     |     |     | 471   | 288   | 75   | 49   | 34   | 43   |
| 24    |     |     |     |     |     |     | 370   | 282   | 69   | 61   | 34   | 43   |
| 25    |     |     |     |     |     |     | 358   | 290   | 67   | 67   | 34   | 43   |
| 26    |     |     |     |     |     |     | 361   | 266   | 65   | 65   | 22   | 41   |
| 27    |     |     |     |     |     |     | 361   | 231   | 67   | 63   | 14   | 41   |
| 28    |     |     |     |     |     |     | 358   | 208   | 69   | 61   | 16   | 41   |
| 29    |     |     |     |     |     |     | 344   | 198   | 71   | 57   | 21   | 41   |
| 30    |     |     |     |     |     |     | 332   | 203   | 61   | 53   | 21   | 43   |
| 31    |     |     |     |     |     |     | ---   | 226   | ---  | 51   | 20   | ---  |
| TOTAL |     |     |     |     |     |     | 13848 | 7440  | 4325 | 1669 | 1123 | 1119 |
| MEAN  |     |     |     |     |     |     | 462   | 240   | 144  | 53.8 | 36.2 | 37.3 |
| MAX   |     |     |     |     |     |     | 833   | 326   | 255  | 67   | 51   | 47   |
| MIN   |     |     |     |     |     |     | 90    | 188   | 61   | 41   | 14   | 18   |
| AC-FT |     |     |     |     |     |     | 27470 | 14760 | 8580 | 3310 | 2230 | 2220 |

## PLATTE RIVER BASIN

06639000 SWEETWATER RIVER NEAR ALCOVA, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>NATURAL<br>DIS-<br>SOLVED<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| SEP<br>12... | 1030 | 43                                              | 11.5                                 | 6.2                                                 | 17                                                         | 0.7                                                        | 9.6                                                         | 3.6                                                         | 7.3                                                            | 3.6                                                            | 0.1                                                             | 12                                                     |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>NATURAL<br>DIS-<br>SOLVED<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| OCT<br>23... | 1130 | 90                                              | 8.0                                  | 4.5                                                 | 10                                                         | <0.4                                                       | 7.0                                                         | 0.9                                                         | 5.5                                                            | 0.8                                                            | 20                                                              | 8.3                                                    |
| JAN<br>16... | 1130 | 62                                              | 0.0                                  | 5.9                                                 | 37                                                         | <0.4                                                       | 13                                                          | 3.0                                                         | 9.9                                                            | 2.9                                                            | 0.1                                                             | 19                                                     |
| APR<br>30... | 0830 | 347                                             | 14.0                                 | --                                                  | <2.0                                                       | --                                                         | --                                                          | --                                                          | 7.2                                                            | --                                                             | <0.2                                                            | 5.5                                                    |
| JUL<br>15... | 1100 | 39                                              | 20.0                                 | --                                                  | 3.0                                                        | --                                                         | --                                                          | --                                                          | 10                                                             | --                                                             | <0.2                                                            | 11                                                     |

06639480 HORSE CREEK AT HIGHWAY 220, NEAR ALCOVA, WY

LOCATION.--Lat 42°34'10", long 106°59'58", in NW1/4 SE1/4 NE1/4 sec.15, T.30 N., R.85 W., Natrona County,  
Hydrologic Unit 10180006, at bridge on State Highway 220, 3.0 mi upstream from mouth, 3.0 mi downstream from  
mouth of Fish Creek, and 14.4 mi west of Alcovia.

PERIOD OF RECORD.--October 1981 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUL<br>01... | 0830 | 5.9                                             | 15.0                                 | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>11... | 1140 | 7.6                                             | 17.5                                 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>08... | 0815 | 5.9                                             | 12.0                                 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## 06640500 PATHFINDER RESERVOIR NEAR ALCOVA, WY

LOCATION.--Lat 42°28'06", long 106°51'12", in NW1/4 SW1/4 sec.24, T.29 N., R.84 W., Natrona County, Hydrologic Unit 10180003, in gatehouse near left end of dam on North Platte River and 9.0 mi southwest of Alcovia.

DRAINAGE AREA.--10,711 mi<sup>2</sup>, of which 700 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--January 1909 to current year. Monthend figures only for some periods, published in WSP 1310.

REVISED RECORDS.--WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,678.1 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 12, 1950, nonrecording gages near present site, and Apr. 12 to Sept. 30, 1950, water-stage recorder at present site, all at Bureau of Reclamation datum which was 1.9 ft lower.

REMARKS.--Reservoir is formed by masonry dam. Storage began in April 1909. Capacity, 1,016,000 acre-ft between elevations 5,668.1 ft, north outlet trashrack sill, and 5,850.1 ft, crest of spillway. No dead storage. Figures given herein represent total contents. Water is used to irrigate lands in Wyoming and Nebraska under the North Platte project. Since December 1960, water has been diverted directly through a tunnel to Fremont Canyon Powerplant, bypassing a section of river channel immediately below Pathfinder Dam.

COOPERATION.--Records provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 1,182,000 acre-ft, June 25-27, 1917, elevation, 5,858.86 ft, present datum; no storage at times during 1909-12, 1931, 1958-59.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 949,000 acre-ft, May 13, elevation, 5,846.94 ft; minimum daily contents, 722,000 acre-ft, Sept. 28-30, minimum elevation, 5,835.10 ft, Sept. 30.

Capacity table (elevation, in feet,  
and contents, in acre-feet)

|       |         |       |           |
|-------|---------|-------|-----------|
| 5,835 | 720,000 | 5,845 | 908,000   |
| 5,840 | 810,000 | 5,850 | 1,014,000 |

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT      | NOV      | DEC      | JAN      | FEB      | MAR      | APR      | MAY      | JUN      | JUL      | AUG      | SEP      |
|-----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1   | 845000   | 854000   | 822000   | 848000   | 883000   | 910000   | 926000   | 941000   | 921000   | 869000   | 799000   | 725000   |
| 2   | 846000   | 853000   | 824000   | 849000   | 881000   | 910000   | 926000   | 940000   | 919000   | 869000   | 797000   | 726000   |
| 3   | 846000   | 852000   | 824000   | 851000   | 884000   | 911000   | 925000   | 941000   | 918000   | 868000   | 795000   | 727000   |
| 4   | 846000   | 851000   | 823000   | 851000   | 886000   | 911000   | 926000   | 942000   | 916000   | 866000   | 794000   | 726000   |
| 5   | 847000   | 849000   | 824000   | 852000   | 887000   | 913000   | 925000   | 943000   | 914000   | 865000   | 792000   | 726000   |
| 6   | 848000   | 849000   | 825000   | 853000   | 889000   | 913000   | 923000   | 944000   | 912000   | 862000   | 789000   | 726000   |
| 7   | 848000   | 847000   | 825000   | 854000   | 889000   | 914000   | 924000   | 945000   | 909000   | 860000   | 786000   | 724000   |
| 8   | 848000   | 845000   | 825000   | 855000   | 890000   | 914000   | 925000   | 945000   | 906000   | 858000   | 784000   | 724000   |
| 9   | 849000   | 843000   | 827000   | 856000   | 892000   | 915000   | 926000   | 945000   | 904000   | 854000   | 781000   | 724000   |
| 10  | 849000   | 842000   | 827000   | 858000   | 893000   | 915000   | 927000   | 947000   | 901000   | 854000   | 778000   | 725000   |
| 11  | 849000   | 840000   | 828000   | 859000   | 894000   | 916000   | 927000   | 947000   | 898000   | 851000   | 774000   | 725000   |
| 12  | 850000   | 839000   | 829000   | 860000   | 896000   | 916000   | 929000   | 948000   | 896000   | 849000   | 772000   | 725000   |
| 13  | 850000   | 838000   | 828000   | 861000   | 898000   | 916000   | 930000   | 949000   | 894000   | 846000   | 769000   | 724000   |
| 14  | 850000   | 836000   | 828000   | 862000   | 900000   | 918000   | 931000   | 947000   | 892000   | 844000   | 766000   | 725000   |
| 15  | 851000   | 835000   | 829000   | 863000   | 903000   | 919000   | 931000   | 947000   | 892000   | 842000   | 763000   | 724000   |
| 16  | 851000   | 834000   | 830000   | 865000   | 905000   | 919000   | 932000   | 946000   | 890000   | 840000   | 760000   | 724000   |
| 17  | 852000   | 832000   | 831000   | 866000   | 907000   | 920000   | 932000   | 945000   | 889000   | 838000   | 758000   | 724000   |
| 18  | 852000   | 830000   | 833000   | 867000   | 909000   | 921000   | 932000   | 945000   | 889000   | 834000   | 754000   | 725000   |
| 19  | 853000   | 829000   | 834000   | 868000   | 911000   | 921000   | 932000   | 944000   | 888000   | 831000   | 752000   | 725000   |
| 20  | 853000   | 828000   | 835000   | 870000   | 912000   | 922000   | 932000   | 942000   | 886000   | 828000   | 748000   | 724000   |
| 21  | 854000   | 825000   | 836000   | 871000   | 912000   | 922000   | 932000   | 941000   | 885000   | 821000   | 745000   | 725000   |
| 22  | 855000   | 824000   | 837000   | 871000   | 912000   | 922000   | 932000   | 940000   | 883000   | 820000   | 743000   | 724000   |
| 23  | 856000   | 823000   | 839000   | 871000   | 913000   | 923000   | 932000   | 938000   | 882000   | 817000   | 740000   | 724000   |
| 24  | 857000   | 822000   | 840000   | 869000   | 913000   | 923000   | 934000   | 936000   | 880000   | 815000   | 738000   | 724000   |
| 25  | 858000   | 823000   | 842000   | 870000   | 912000   | 923000   | 934000   | 933000   | 879000   | 812000   | 735000   | 724000   |
| 26  | 859000   | 822000   | 843000   | 873000   | 911000   | 924000   | 935000   | 932000   | 878000   | 809000   | 732000   | 724000   |
| 27  | 859000   | 822000   | 843000   | 875000   | 910000   | 925000   | 936000   | 930000   | 877000   | 805000   | 730000   | 723000   |
| 28  | 860000   | 822000   | 844000   | 876000   | 910000   | 925000   | 937000   | 929000   | 874000   | 804000   | 728000   | 722000   |
| 29  | 860000   | 822000   | 846000   | 877000   | ---      | 925000   | 938000   | 927000   | 873000   | 802000   | 727000   | 722000   |
| 30  | 858000   | 823000   | 847000   | 878000   | ---      | 925000   | 939000   | 926000   | 872000   | 801000   | 725000   | 722000   |
| 31  | 856000   | ---      | 847000   | 881000   | ---      | 926000   | ---      | 923000   | ---      | 779000   | 725000   | ---      |
| MAX | 860000   | 854000   | 847000   | 881000   | 913000   | 926000   | 939000   | 949000   | 921000   | 869000   | 799000   | 727000   |
| MIN | 845000   | 822000   | 822000   | 848000   | 881000   | 910000   | 923000   | 923000   | 872000   | 779000   | 725000   | 722000   |
| (+) | 5,842.39 | 5,840.66 | 5,841.94 | 5,843.63 | 5,845.06 | 5,845.84 | 5,846.47 | 5,845.71 | 5,843.18 | 5,839.43 | 5,835.28 | 5,835.10 |
| (+) | +10,000  | -33,000  | +24,000  | +34,000  | +29,000  | +16,000  | +13,000  | -16,000  | -51,000  | -93,000  | -54,000  | -3,000   |

CAL YR 1986 MAX 1051000 MIN 675000 (+) +174,000  
WTR YR 1987 MAX 949000 MIN 722000 (+) -124,000

(+) Elevation, in feet, at end of month.

(+) Change in contents, in acre-feet.

## PLATTE RIVER BASIN

06641500 ALCOVA RESERVOIR AT ALCOVA, WY

LOCATION.--Lat 42°32'52", long 106°43'08", in SE1/4 SE1/4 sec.24, T.30 N., R.83 W., Natrona County, Hydrologic Unit 10180007, in elevator shaft at right end of dam on North Platte River and 0.2 mi southwest of Alcovia.

DRAINAGE AREA.--10,766 mi<sup>2</sup>, of which 700 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--February 1938 to current year. Prior to October 1950 monthend figures only, published in WSP 1310.

REVISED RECORDS.--WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder for elevations above 5,447.00 ft. Datum of gage is 5,320 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to June 27, 1955, nonrecording gages near present site at same datum.

REMARKS.--Reservoir is formed by rock-fill dam completed in January 1938; storage began Feb. 8, 1938. Capacity, 184,300 acre-ft at elevation 5,500.00 ft, top of spillway gates. Dead storage, 100 acre-ft. Figures given herein represent total contents. Usable contents published prior to October 1956. Water is used for irrigation in North Platte River basin.

COOPERATION.--Records provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 190,300 acre-ft, Aug. 14, 15, 1952, elevation, 5,499.92 ft; minimum daily (since appreciable storage was attained), 1,980 acre-ft, Sept. 30, 1940, elevation, 5,353.56 ft. No usable storage prior to February 1938.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 183,000 acre-ft, June 14, elevation, 5,498.97 ft; minimum daily contents, 147,000 acre-ft, Dec. 25, 27-28, 30-31, Jan. 2-10, minimum elevation, 5,483.91 ft, Jan. 6.

Capacity table (elevation, in feet,  
and contents, in acre-feet)

|       |         |       |         |
|-------|---------|-------|---------|
| 5,480 | 139,000 | 5,495 | 172,000 |
| 5,485 | 149,000 | 5,500 | 184,000 |
| 5,490 | 160,000 |       |         |

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY         | OCT      | NOV      | DEC      | JAN      | FEB      | MAR      | APR      | MAY      | JUN      | JUL      | AUG      | SEP      |
|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1           | 176000   | 153000   | 149000   | 148000   | 153000   | 156000   | 156000   | 182000   | 180000   | 180000   | 180000   | 181000   |
| 2           | 175000   | 152000   | 148000   | 147000   | 153000   | 156000   | 157000   | 181000   | 179000   | 180000   | 180000   | 181000   |
| 3           | 174000   | 151000   | 148000   | 147000   | 153000   | 156000   | 158000   | 181000   | 179000   | 180000   | 180000   | 181000   |
| 4           | 173000   | 151000   | 148000   | 147000   | 153000   | 155000   | 159000   | 180000   | 179000   | 180000   | 180000   | 181000   |
| 5           | 172000   | 151000   | 148000   | 147000   | 153000   | 156000   | 159000   | 180000   | 179000   | 180000   | 180000   | 181000   |
| 6           | 171000   | 151000   | 148000   | 147000   | 153000   | 156000   | 159000   | 180000   | 179000   | 180000   | 180000   | 181000   |
| 7           | 169000   | 151000   | 148000   | 147000   | 153000   | 156000   | 160000   | 179000   | 180000   | 181000   | 180000   | 181000   |
| 8           | 168000   | 151000   | 148000   | 147000   | 153000   | 156000   | 162000   | 179000   | 180000   | 181000   | 179000   | 182000   |
| 9           | 167000   | 151000   | 148000   | 147000   | 154000   | 156000   | 163000   | 179000   | 180000   | 181000   | 178000   | 181000   |
| 10          | 166000   | 151000   | 148000   | 147000   | 154000   | 156000   | 164000   | 179000   | 181000   | 180000   | 178000   | 181000   |
| 11          | 165000   | 151000   | 148000   | 148000   | 153000   | 156000   | 164000   | 179000   | 181000   | 180000   | 178000   | 180000   |
| 12          | 164000   | 150000   | 148000   | 149000   | 153000   | 156000   | 165000   | 179000   | 182000   | 179000   | 178000   | 180000   |
| 13          | 162000   | 150000   | 148000   | 149000   | 153000   | 156000   | 166000   | 179000   | 182000   | 179000   | 178000   | 180000   |
| 14          | 161000   | 150000   | 148000   | 150000   | 153000   | 156000   | 167000   | 180000   | 183000   | 179000   | 178000   | 180000   |
| 15          | 160000   | 150000   | 148000   | 150000   | 153000   | 156000   | 168000   | 180000   | 180000   | 178000   | 178000   | 180000   |
| 16          | 159000   | 150000   | 148000   | 151000   | 153000   | 156000   | 169000   | 181000   | 180000   | 177000   | 178000   | 180000   |
| 17          | 158000   | 150000   | 148000   | 151000   | 153000   | 156000   | 174000   | 181000   | 179000   | 177000   | 178000   | 180000   |
| 18          | 157000   | 150000   | 148000   | 151000   | 153000   | 156000   | 172000   | 180000   | 179000   | 177000   | 178000   | 179000   |
| 19          | 156000   | 150000   | 148000   | 152000   | 153000   | 156000   | 174000   | 180000   | 179000   | 177000   | 178000   | 179000   |
| 20          | 156000   | 150000   | 148000   | 152000   | 153000   | 156000   | 176000   | 179000   | 180000   | 178000   | 178000   | 179000   |
| 21          | 156000   | 150000   | 148000   | 152000   | 153000   | 156000   | 178000   | 179000   | 180000   | 179000   | 178000   | 179000   |
| 22          | 156000   | 150000   | 148000   | 152000   | 153000   | 156000   | 180000   | 179000   | 180000   | 180000   | 178000   | 179000   |
| 23          | 156000   | 150000   | 148000   | 152000   | 152000   | 156000   | 180000   | 179000   | 180000   | 181000   | 178000   | 179000   |
| 24          | 155000   | 149000   | 148000   | 152000   | 153000   | 156000   | 181000   | 180000   | 180000   | 181000   | 178000   | 179000   |
| 25          | 155000   | 150000   | 147000   | 152000   | 154000   | 156000   | 181000   | 180000   | 180000   | 181000   | 179000   | 178000   |
| 26          | 156000   | 150000   | 148000   | 152000   | 155000   | 156000   | 181000   | 180000   | 180000   | 182000   | 179000   | 178000   |
| 27          | 156000   | 149000   | 147000   | 152000   | 156000   | 156000   | 181000   | 180000   | 180000   | 181000   | 180000   | 178000   |
| 28          | 156000   | 149000   | 147000   | 153000   | 156000   | 156000   | 181000   | 180000   | 180000   | 181000   | 180000   | 177000   |
| 29          | 156000   | 149000   | 148000   | 152000   | ---      | 156000   | 181000   | 180000   | 180000   | 181000   | 181000   | 177000   |
| 30          | 155000   | 149000   | 147000   | 152000   | ---      | 156000   | 182000   | 180000   | 180000   | 180000   | 181000   | 177000   |
| 31          | 154000   | ---      | 147000   | 153000   | ---      | 156000   | ---      | 180000   | ---      | 180000   | 182000   | ---      |
| MAX         | 176000   | 153000   | 149000   | 153000   | 156000   | 156000   | 182000   | 182000   | 183000   | 182000   | 182000   | 182000   |
| MIN         | 154000   | 149000   | 147000   | 147000   | 152000   | 155000   | 156000   | 179000   | 179000   | 177000   | 178000   | 177000   |
| (+)         | 5,487.05 | 5,484.96 | 5,484.07 | 5,486.45 | 5,488.02 | 5,488.02 | 5,498.88 | 5,498.26 | 5,498.16 | 5,498.16 | 5,498.87 | 5,497.11 |
| (+)         | -23,000  | -5,000   | -2,000   | +6,000   | +3,000   | 0        | +26,000  | -2,000   | 0        | 0        | +2,000   | -5,000   |
| CAL YR 1986 | MAX      | 182000   | MIN      | 139000   | (+)      | +7,000   |          |          |          |          |          |          |
| WTR YR 1987 | MAX      | 183000   | MIN      | 147000   | (+)      | 0        |          |          |          |          |          |          |

(+) Elevation, in feet, at end of month.

(+) Change in contents, in acre-feet.



## 06642000 NORTH PLATTE RIVER AT ALCOVA, WY

LOCATION.--Lat 42°34'27", long 106°41'31", in NW1/4 NE1/4 NW1/4 sec.17, T.30 N., R.82 W., Natrona County, Hydrologic Unit 10180007, on left bank 0.5 mi downstream from Hogback Draw, 0.8 mi downstream from Gray Reef Dam, 1.9 mi northeast of Alcovia, and 3.8 mi downstream from Alcovia Dam.

DRAINAGE AREA.--10,812 mi<sup>2</sup>, of which 700 mi<sup>2</sup> is noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1904 to December 1905, October 1934 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1937-38, 1945. WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,299.40 ft above National Geodetic Vertical Datum of 1929. Feb. 19, 1904, to Dec. 31, 1905, nonrecording gage at site 3.7 mi upstream at different datum. June 1, 1935, to Apr. 27, 1961, water-stage recorder at site 3.5 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Seminoe, Pathfinder, and Alcovia Reservoirs. (See station 06635500, 06640500, 06641500.) Natural flow of stream affected by transbasin diversions, storage reservoirs, power development, diversions for irrigation, and return flow from irrigated areas.

COOPERATION.--Nineteen measurements provided by the Bureau of Reclamation and four measurements provided by the Wyoming State Engineer's Office.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 13,400 ft<sup>3</sup>/s, June 6, 10, 11, 1905, gage height, 11.5 ft, site and datum then in use; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,710 ft<sup>3</sup>/s, Aug. 9, gage height, 4.39 ft; minimum daily, 345 ft<sup>3</sup>/s, Apr. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL    | AUG     | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|--------|---------|-------|
| 1           | 1240  | 2330   | 977   | 897   | 790   | 910   | 375   | 355   | 1210  | 1760   | 2380    | 1300  |
| 2           | 1540  | 2450   | 978   | 888   | 792   | 929   | 372   | 350   | 1220  | 1690   | 2340    | 1110  |
| 3           | 1530  | 2250   | 977   | 872   | 786   | 924   | 374   | 354   | 1320  | 1690   | 2310    | 995   |
| 4           | 1550  | 1980   | 914   | 884   | 791   | 923   | 357   | 354   | 1470  | 1710   | 2300    | 998   |
| 5           | 1520  | 1910   | 915   | 886   | 786   | 803   | 1440  | 355   | 1560  | 1710   | 2350    | 997   |
| 6           | 1550  | 1870   | 925   | 884   | 791   | 599   | 1530  | 356   | 1540  | 1690   | 2340    | 994   |
| 7           | 1550  | 1880   | 910   | 880   | 783   | 512   | 425   | 364   | 1540  | 1980   | 2420    | 987   |
| 8           | 1560  | 1890   | 912   | 836   | 788   | 508   | 361   | 366   | 1550  | 2280   | 2640    | 943   |
| 9           | 1550  | 1890   | 909   | 772   | 822   | 511   | 368   | 369   | 1440  | 2440   | 2590    | 913   |
| 10          | 1550  | 1890   | 905   | 777   | 877   | 509   | 366   | 371   | 1460  | 2460   | 2380    | 905   |
| 11          | 1560  | 1880   | 913   | 695   | 898   | 512   | 362   | 371   | 1510  | 2430   | 2200    | 908   |
| 12          | 1550  | 1890   | 912   | 417   | 898   | 512   | 374   | 378   | 1520  | 2430   | 2360    | 901   |
| 13          | 1560  | 1880   | 901   | 465   | 891   | 507   | 374   | 370   | 1510  | 2370   | 2380    | 902   |
| 14          | 1560  | 1890   | 906   | 592   | 895   | 516   | 369   | 355   | 1520  | 2380   | 2360    | 861   |
| 15          | 1570  | 1920   | 903   | 633   | 891   | 517   | 367   | 349   | 1220  | 2370   | 2360    | 790   |
| 16          | 1560  | 1930   | 905   | 656   | 897   | 522   | 369   | 620   | 1170  | 2370   | 2360    | 763   |
| 17          | 1430  | 1930   | 904   | 703   | 897   | 525   | 376   | 755   | 1280  | 2390   | 2340    | 732   |
| 18          | 1300  | 1890   | 904   | 699   | 900   | 519   | 373   | 769   | 1280  | 2370   | 2370    | 702   |
| 19          | 1310  | 1920   | 898   | 738   | 906   | 521   | 376   | 824   | 1430  | 2370   | 2430    | 709   |
| 20          | 1080  | 1920   | 893   | 776   | 901   | 518   | 375   | 1180  | 1650  | 2360   | 2430    | 708   |
| 21          | 1010  | 1920   | 902   | 775   | 902   | 520   | 379   | 1190  | 1640  | 2340   | 2420    | 739   |
| 22          | 957   | 1920   | 894   | 775   | 907   | 515   | 384   | 1180  | 1640  | 2340   | 2410    | 804   |
| 23          | 975   | 1930   | 897   | 780   | 904   | 518   | 453   | 1180  | 1670  | 2310   | 2400    | 814   |
| 24          | 914   | 1630   | 894   | 774   | 907   | 464   | 382   | 1200  | 1690  | 2300   | 2370    | 817   |
| 25          | 885   | 968    | 891   | 772   | 910   | 372   | 384   | 1210  | 1740  | 2300   | 2320    | 820   |
| 26          | 890   | 970    | 895   | 775   | 909   | 370   | 385   | 1210  | 1760  | 2350   | 2260    | 835   |
| 27          | 887   | 973    | 896   | 777   | 910   | 388   | 371   | 1210  | 1780  | 2370   | 2160    | 827   |
| 28          | 895   | 969    | 902   | 778   | 916   | 375   | 345   | 1200  | 1800  | 2520   | 2010    | 849   |
| 29          | 1460  | 968    | 887   | 778   | ---   | 374   | 346   | 1210  | 1750  | 2480   | 1860    | 845   |
| 30          | 2260  | 972    | 894   | 774   | ---   | 370   | 348   | 1210  | 1770  | 2390   | 1650    | 843   |
| 31          | 2300  | ---    | 892   | 789   | ---   | 372   | ---   | 1200  | ---   | 2380   | 1480    | ---   |
| TOTAL       | 43053 | 52610  | 28205 | 23497 | 24245 | 16935 | 13460 | 22765 | 45640 | 69330  | 70980   | 26311 |
| MEAN        | 1389  | 1754   | 910   | 758   | 866   | 546   | 449   | 734   | 1521  | 2236   | 2290    | 877   |
| MAX         | 2300  | 2450   | 978   | 897   | 916   | 929   | 1530  | 1210  | 1800  | 2520   | 2640    | 1300  |
| MIN         | 885   | 968    | 887   | 417   | 783   | 370   | 345   | 349   | 1170  | 1690   | 1480    | 702   |
| AC-FT       | 85400 | 104400 | 55940 | 46610 | 48090 | 33590 | 26700 | 45150 | 90530 | 137500 | 140800  | 52190 |
| CAL YR 1986 | TOTAL | 712618 |       | MEAN  | 1952  | MAX   | 5520  | MIN   | 628   | AC-FT  | 1413000 |       |
| WTR YR 1987 | TOTAL | 437031 |       | MEAN  | 1197  | MAX   | 2640  | MIN   | 345   | AC-FT  | 866900  |       |



06642000 NORTH PLATTE RIVER AT ALCOVA, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to September 1987 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1965 to September 1969, October 1979 to September 1981.

WATER TEMPERATURES: October 1965 to September 1969, October 1979 to September 1981.

DISSOLVED SOLIDS: October 1965 to September 1969.

HARDNESS: October 1965 to September 1969.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|----------------------------------------------|----------------------------------------------------------------|----------------------------------------|
| OCT<br>23... | 1600 | 1000                                            | 470                                               | 8.2                            | 11.0                                 | 630                                                  | 10.8                                | 119                                          | K1                                                             | 180                                    |
| JAN<br>16... | 1400 | 578                                             | 500                                               | 8.1                            | 0.0                                  | 623                                                  | 13.9                                | 117                                          | K1                                                             | 180                                    |
| APR<br>02... | 1000 | 367                                             | 480                                               | 8.2                            | 4.0                                  | 630                                                  | 15.2                                | 141                                          | <1                                                             | 170                                    |
| JUL<br>01... | 1200 | 1800                                            | 460                                               | 7.8                            | 12.0                                 | 627                                                  | 10.6                                | 120                                          | K4                                                             | 170                                    |

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

| DATE         | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) |
|--------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|
| OCT<br>23... | 47                                           | 14                                                   | 29                                           | 1                                       | 2.4                                                 | 120                                             | 100                                           | 7.8                                                 | 0.4                                                | 12                                                |
| JAN<br>16... | 46                                           | 15                                                   | 31                                           | 1                                       | 2.9                                                 | 110                                             | 110                                           | 8.3                                                 | 0.5                                                | 11                                                |
| APR<br>02... | 44                                           | 14                                                   | 30                                           | 1                                       | 2.9                                                 | 120                                             | 100                                           | 8.7                                                 | 0.3                                                | 13                                                |
| JUL<br>01... | 46                                           | 14                                                   | 26                                           | 0.9                                     | 3.0                                                 | 110                                             | 100                                           | 7.3                                                 | 0.3                                                | 11                                                |

| DATE         | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|--------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>23... | 308                                                                | 280                                                                 | 0.42                                                | 832                                               | 0.2                                                  | 0.2                                                           | 0.04                                                 | 0.46                                                 | 0.5                                                                | 0.07                                        |
| JAN<br>16... | 312                                                                | 290                                                                 | 0.42                                                | 487                                               | 0.2                                                  | 0.2                                                           | 0.03                                                 | 0.67                                                 | 0.7                                                                | 0.03                                        |
| APR<br>02... | 304                                                                | 280                                                                 | 0.41                                                | 301                                               | 0.1                                                  | 0.1                                                           | 0.04                                                 | 0.76                                                 | 0.8                                                                | 0.06                                        |
| JUL<br>01... | 292                                                                | 270                                                                 | 0.40                                                | 1420                                              | 0.1                                                  | 0.1                                                           | 0.05                                                 | 0.55                                                 | 0.6                                                                | 0.05                                        |

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BORON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS B) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) |
|--------------|------|-------------------------------------------------|--------------------------------------|---------------------------------------------------|--------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|
| OCT<br>16... | 0730 | 1350                                            | 11.0                                 | 440                                               | 8.1                            | 2                                            | <100                                         | 40                                         | <1                                           | <10                                                 |

| DATE         | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|--------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------------|--------------------------------------------|
| OCT<br>16... | <10                                          | <0.1                                         | <5                                         | 9                                                     | <1                                           | 1                                                   | <1                                           | 2                                                  | <10                                        |

06643500 NORTH PLATTE RIVER NEAR GOOSE EGG, WY

LOCATION.--Lat 42°45'10", Long 106°31'12", in SW1/4 NW1/4 SW1/4 sec.11, T.32 N., R.81 W., Natrona County, Hydrologic Unit 10180007, 1.6 mi southwest of Goose Egg, 2.5 mi upstream from Poison Spider Creek, and 12 mi southwest of Casper.

DRAINAGE AREA.--11,439 mi<sup>2</sup>, of which 700 mi<sup>2</sup> is noncontributing.

PERIOD OF RECORD.--April 1983 to September 1984, October 1985 to current year.

| DATE      | TIME | STREAM-FLOW, INSTANTANEOUS (CFS) | SPECIFIC CONDUCTANCE (US/CM) | TEMPERATURE WATER (DEG C) | PH (STANDARD UNITS) | HARDNESS (MG/L AS CaCO3) | CALCIUM DIS-SOLVED (MG/L AS Ca) | MAGNESIUM, DIS-SOLVED (MG/L AS Mg) | SODIUM, DIS-SOLVED (MG/L AS Na) | SODIUM ADSORPTION RATIO | POTASSIUM, DIS-SOLVED (MG/L AS K) | ALKALINITY LAB (MG/L AS CaCO3) |
|-----------|------|----------------------------------|------------------------------|---------------------------|---------------------|--------------------------|---------------------------------|------------------------------------|---------------------------------|-------------------------|-----------------------------------|--------------------------------|
| NOV 20... | 1300 | 2100                             | 460                          | 6.0                       | 8.1                 | 200                      | 51                              | 17                                 | 32                              | 1                       | 2.2                               | 130                            |
| JAN 09... | 1030 | E900                             | 585                          | 0.0                       | 8.2                 | 210                      | 55                              | 18                                 | 37                              | 1                       | 3.1                               | 120                            |
| FEB 23... | 1200 | 971                              | 580                          | 3.0                       | 8.5                 | 200                      | 53                              | 16                                 | 36                              | 1                       | 2.7                               | 120                            |
| APR 09... | 1330 | 771                              | 570                          | 10.0                      | 8.3                 | 200                      | 52                              | 16                                 | 39                              | 1                       | 7.1                               | 120                            |
| MAY 28... | 0930 | 1200                             | 470                          | 9.5                       | 8.6                 | 200                      | 51                              | 17                                 | 31                              | 1                       | 2.3                               | 110                            |
| JUL 07... | 1040 | 1570                             | 460                          | 14.0                      | 8.6                 | 170                      | 45                              | 15                                 | 30                              | 1                       | 3.1                               | 120                            |
| AUG 13... | 1300 | 2530                             | 500                          | 16.0                      | 8.3                 | 180                      | 48                              | 14                                 | 31                              | 1                       | 2.8                               | 120                            |
| 27...     | 0900 | 2830                             | 500                          | 14.5                      | 8.3                 | 180                      | 49                              | 15                                 | 32                              | 1                       | 2.9                               | 120                            |
| SEP 15... | 0845 | 903                              | 580                          | 14.5                      | 8.4                 | 210                      | 56                              | 18                                 | 39                              | 1                       | 3.0                               | 130                            |

E-Estimate.

| DATE         | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDED<br>(T/DAY) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|--------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|--------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------|
| NOV<br>20... | 110                                           | 8.5                                                 | 0.3                                                | 11                                                | 310                                                            | 0.47                                                | 1950                                              | 0.2                                                           | 0.03                                        | 32                                         | 181                                                            | --                                                            |
| JAN<br>09... | 140                                           | 10                                                  | 0.4                                                | 11                                                | 350                                                            | 0.47                                                | --                                                | 0.2                                                           | 0.09                                        | --                                         | --                                                             | --                                                            |
| FEB<br>23... | 130                                           | 9.8                                                 | 0.3                                                | 12                                                | 330                                                            | 0.45                                                | 870                                               | 0.2                                                           | 0.03                                        | 17                                         | 45                                                             | --                                                            |
| APR<br>09... | 140                                           | 8.1                                                 | 0.3                                                | 12                                                | 350                                                            | 0.47                                                | 721                                               | 0.2                                                           | 0.25                                        | 280                                        | 583                                                            | 99                                                            |
| MAY<br>28... | 120                                           | 8.0                                                 | 0.3                                                | 9.9                                               | 310                                                            | 0.42                                                | 990                                               | 4.6                                                           | 0.10                                        | 87                                         | 282                                                            | --                                                            |
| JUL<br>07... | 110                                           | 7.7                                                 | 0.3                                                | 11                                                | 290                                                            | 0.40                                                | 1250                                              | 0.1                                                           | 0.18                                        | 53                                         | 225                                                            | --                                                            |
| AUG<br>13... | 110                                           | 8.4                                                 | 0.3                                                | 13                                                | 300                                                            | 0.41                                                | 2050                                              | <0.1                                                          | 0.11                                        | 28                                         | 191                                                            | --                                                            |
| 27...        | 120                                           | 35                                                  | 0.3                                                | 13                                                | 340                                                            | 0.46                                                | 2590                                              | 0.2                                                           | 0.14                                        | 110                                        | 841                                                            | --                                                            |
| SEP<br>15... | 150                                           | 8.3                                                 | 0.3                                                | 11                                                | 360                                                            | 0.49                                                | 886                                               | 0.1                                                           | 0.070                                       | 31                                         | 76                                                             | --                                                            |

| DATE      | TIME | BED MAT. SIEVE DIAM. % FINER THAN .062 MM | BED MAT. SIEVE DIAM. % FINER THAN .125 MM | BED MAT. SIEVE DIAM. % FINER THAN .250 MM | BED MAT. SIEVE DIAM. % FINER THAN .500 MM | BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM | BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM | BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM | BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM | BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM | BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM | BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM |
|-----------|------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| APR 09... | 1330 | 1                                         | 2                                         | 5                                         | 11                                        | 21                                        | 34                                        | 48                                        | 58                                        | 68                                        | 84                                        | --                                        |
| AUG 13... | 1300 | --                                        | --                                        | 1                                         | 2                                         | 3                                         | 5                                         | 8                                         | 16                                        | 30                                        | 68                                        | 100                                       |

## PLATTE RIVER BASIN

06643510 NORTH PLATTE RIVER ABOVE POISON SPIDER CREEK, NEAR GOOSE EGG, WY

LOCATION.--Lat 42°46'18", long 106°31'48", in NW1/4 SW1/4 NE1/4 sec.3, T.32 N., R.81 W., Natrona County, Hydrologic Unit 10180007, at bridge on county road, 0.3 mi upstream from Poison Spider Creek, and 2.4 mi west of Goose Egg.

PERIOD OF RECORD.--November 1977 to November 1979, February 1982 to September 1987 (discontinued).

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>14... | 1000 | 1690                                            | 500                                               | 8.6                            | 10.0                                 | 630                                                  | 10.4                                |
| JAN<br>09... | 1030 | E900                                            | 585                                               | 8.2                            | 0.0                                  | 629                                                  | 12.9                                |
| MAY<br>28... | 0930 | 1200                                            | 470                                               | 8.6                            | 9.5                                  | 620                                                  | 9.6                                 |
| AUG<br>13... | 1300 | 2530                                            | 500                                               | 8.3                            | 16.0                                 | 622                                                  | 9.8                                 |

E-Estimate.

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>14... | 112                                                            | K5                                                             | 0.2                                                  | 0.02                                                 | 0.28                                                 | 0.3                                                                | 0.03                                        |
| JAN<br>09... | 107                                                            | K1                                                             | 0.2                                                  | 0.05                                                 | 0.65                                                 | 0.7                                                                | 0.01                                        |
| MAY<br>28... | 104                                                            | 21                                                             | <0.1                                                 | 0.02                                                 | 0.78                                                 | 0.8                                                                | 0.08                                        |
| AUG<br>13... | 122                                                            | K8                                                             | <0.1                                                 | 0.01                                                 | 0.69                                                 | 0.7                                                                | 0.06                                        |

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

06644085 NORTH PLATTE RIVER AT MILLS, WY

LOCATION.--Lat 42°50'31", long 106°21'33", in NW1/4 NE1/4 SE1/4 sec.7, T.33 N., R.79 W., Natrona County, Hydrologic Unit 10180007, at railroad bridge, 700 ft upstream from Casper Creek, 900 ft east of Mills city limits, and 0.2 mi upstream from bridge on U.S. Highways 20 and 26.

PERIOD OF RECORD.--Water years 1970 to September 1987 (discontinued).

REMARKS.--Discharge records furnished by U.S. Bureau of Reclamation.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|-----------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT 14... | 1230 | 1690                                            | 540                                               | 8.7                            | 10.0                                 | 632                                                  | 10.2                                |
| JAN 22... | 0815 | 800                                             | 580                                               | 8.2                            | 0.5                                  | 626                                                  | 12.0                                |
| JUN 02... | 0820 | 1270                                            | 565                                               | 8.4                            | 11.5                                 | 631                                                  | 8.8                                 |
| AUG 13... | 0825 | 2600                                            | 450                                               | 8.3                            | 15.5                                 | 626                                                  | 8.0                                 |

| DATE      | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|-----------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT 14... | 109                                                            | K8                                                             | 0.2                                                  | 0.02                                                 | 0.68                                                 | 0.7                                                                | 0.05                                        |
| JAN 22... | 102                                                            | K2                                                             | 0.4                                                  | <0.01                                                | --                                                   | 0.8                                                                | 0.03                                        |
| JUN 02... | 98                                                             | 43                                                             | 0.1                                                  | 0.02                                                 | 0.58                                                 | 0.6                                                                | 0.07                                        |
| AUG 13... | 98                                                             | K10                                                            | 0.1                                                  | 0.01                                                 | 0.79                                                 | 0.8                                                                | 0.06                                        |

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

| DATE      | TIME      | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BORON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS B) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) |
|-----------|-----------|-------------------------------------------------|--------------------------------------|---------------------------------------------------|--------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|
| OCT 17... | 1100 1700 |                                                 | 10.0                                 | 510                                               | 8.4                            | 2                                            | <100                                         | 60                                         | <1                                           | <10                                                 |

| DATE      | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|-----------|----------------------------------------------|----------------------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------------|--------------------------------------------|
| OCT 17... | <10                                          | <0.1                                         | <5                                         | 9                                                     | 2                                            | 3                                                   | <1                                           | 3                                                  | <10                                        |

## PLATTE RIVER BASIN

06644500 CASPER CREEK AT CASPER, WY

LOCATION.--Lat 42°50'52", long 106°21'52", in NW1/4 NE1/4 sec.7, T.33 N., R.79 W., Natrona County, Hydrologic Unit 10180007, at U.S. Bureau of Reclamation gaging station, 700 ft upstream from bridge on U.S. Highways 20 and 26, 0.4 mi upstream from mouth, and 2.0 mi west of city hall in Casper.

DRAINAGE AREA.--668 mi<sup>2</sup>, of which 98 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--Water years 1970 to September 1987 (discontinued).

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>15... | 0815 | 15                                              | 5400                                              | 8.2                            | 4.5                                  | 635                                                  | 10.8                                |
| JAN<br>22... | 0920 | 6.6                                             | 6000                                              | 7.8                            | 0.5                                  | 626                                                  | 11.2                                |
| JUN<br>02... | 1015 | 27                                              | 3590                                              | 8.2                            | 13.5                                 | 631                                                  | 9.0                                 |
| AUG<br>12... | 1400 | 17                                              | 2780                                              | 8.4                            | 24.0                                 | 627                                                  | 8.8                                 |

| DATE         | TIME | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>15... | 102  |                                                                | K21                                                            | 7.0                                                  | 0.17                                                 | 1.5                                                  | 1.7                                                                | 0.02                                        |
| JAN<br>22... | 97   |                                                                | K6                                                             | 11.0                                                 | 0.62                                                 | 2.7                                                  | 3.3                                                                | 0.02                                        |
| JUN<br>02... | 106  |                                                                | 180                                                            | 2.6                                                  | 0.11                                                 | 0.99                                                 | 1.1                                                                | 0.07                                        |
| AUG<br>12... | 129  |                                                                | K160                                                           | 1.9                                                  | 0.06                                                 | 0.94                                                 | 1.0                                                                | 0.09                                        |

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

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BORON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS B) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) |
|--------------|------|-------------------------------------------------|--------------------------------------|---------------------------------------------------|--------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|
| OCT<br>17... | 0800 | 17                                              | 4.0                                  | 5200                                              | 8.2                            | <1                                           | 100                                          | 800                                        | <1                                           | <10                                                 |

| DATE         | TIME | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|--------------|------|----------------------------------------------|----------------------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------------|--------------------------------------------|
| OCT<br>17... | 20   |                                              | <0.1                                         | <5                                         | 13                                                    | 4                                            | 120                                                 | <1                                           | 1                                                  | 10                                         |

06644550 NORTH PLATTE RIVER AT CASPER, WY

LOCATION.--Lat 42°51'26", long 106°19'09", in SE1/4 SE1/4 NW1/4 sec.4, T.33 N., R.79 W., Natrona County, Hydrologic Unit 10180007, at bridge on service road, 800 ft west of Center Street exit from Interstate Highway 25, and 0.6 mi northwest of Casper Post Office.

PERIOD OF RECORD.--Water years 1972 to current year.

REMARKS.--Discharge records furnished by Bureau of Reclamation.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | TUR-<br>BID-<br>ITY<br>(NTU) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) |
|-------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| OCT   |      |                                                 |                                                   |                                |                                      |                                                      |                              |                                     |                                                                |                                                                |
| 02... | 1330 | 1900                                            | 600                                               | 8.2                            | 8.0                                  | 625                                                  | 320                          | 8.0                                 | 83                                                             | --                                                             |
| 07... | 1330 | 1590                                            | 645                                               | 8.6                            | 14.0                                 | 629                                                  | 95                           | 8.7                                 | 103                                                            | --                                                             |
| 15... | 0915 | 1690                                            | 620                                               | 8.6                            | 9.5                                  | 636                                                  | 60                           | 9.4                                 | 99                                                             | K8                                                             |
| JAN   |      |                                                 |                                                   |                                |                                      |                                                      |                              |                                     |                                                                |                                                                |
| 22... | 1030 | 800                                             | 630                                               | 8.2                            | 0.0                                  | 627                                                  | --                           | 11.8                                | 98                                                             | K1                                                             |
| APR   |      |                                                 |                                                   |                                |                                      |                                                      |                              |                                     |                                                                |                                                                |
| 23... | 1105 | 728                                             | 1000                                              | 8.5                            | 13.0                                 | 632                                                  | 75                           | 8.9                                 | 102                                                            | --                                                             |
| MAY   |      |                                                 |                                                   |                                |                                      |                                                      |                              |                                     |                                                                |                                                                |
| 01... | 0915 | 500                                             | 890                                               | 8.4                            | 14.0                                 | 623                                                  | 30                           | 8.0                                 | 96                                                             | --                                                             |
| 07... | 0845 | 550                                             | 1000                                              | 8.5                            | 14.0                                 | 634                                                  | 30                           | 8.1                                 | 95                                                             | --                                                             |
| 15... | 1045 | 350                                             | 920                                               | 8.2                            | 18.5                                 | 630                                                  | 32                           | 8.0                                 | 104                                                            | --                                                             |
| 21... | 1115 | 1450                                            | 710                                               | 8.2                            | 9.0                                  | 630                                                  | 120                          | 9.3                                 | 98                                                             | --                                                             |
| 28... | 1320 | 1340                                            | 655                                               | 8.4                            | 14.0                                 | 620                                                  | 55                           | 8.8                                 | 106                                                            | --                                                             |
| JUN   |      |                                                 |                                                   |                                |                                      |                                                      |                              |                                     |                                                                |                                                                |
| 02... | 1120 | 1270                                            | 625                                               | 8.5                            | 12.5                                 | 631                                                  | 40                           | 8.7                                 | 99                                                             | K23                                                            |
| 11... | 1025 | 1530                                            | 645                                               | 8.4                            | 15.0                                 | 628                                                  | 80                           | 8.4                                 | 102                                                            | --                                                             |
| 18... | 0830 | 1300                                            | 605                                               | 8.2                            | 15.5                                 | 629                                                  | 45                           | 7.7                                 | 94                                                             | --                                                             |
| 25... | 0840 | 1720                                            | 580                                               | 8.4                            | 14.0                                 | 635                                                  | 55                           | 8.2                                 | 96                                                             | --                                                             |
| 29... | 1300 | 2040                                            | 560                                               | 7.9                            | 16.0                                 | 633                                                  | 55                           | 8.2                                 | 101                                                            | --                                                             |
| JUL   |      |                                                 |                                                   |                                |                                      |                                                      |                              |                                     |                                                                |                                                                |
| 07... | 1345 | 1700                                            | 540                                               | 8.4                            | 18.0                                 | 620                                                  | 50                           | 8.0                                 | 105                                                            | --                                                             |
| 16... | 0900 | 2400                                            | 517                                               | 8.3                            | 16.0                                 | 621                                                  | 60                           | 7.7                                 | 96                                                             | --                                                             |
| 23... | 1030 | 2600                                            | 530                                               | 8.2                            | 16.0                                 | 631                                                  | 65                           | 7.8                                 | 96                                                             | --                                                             |
| 30... | 0945 | 2400                                            | 540                                               | 8.4                            | 17.5                                 | 626                                                  | 110                          | 7.5                                 | 96                                                             | --                                                             |
| AUG   |      |                                                 |                                                   |                                |                                      |                                                      |                              |                                     |                                                                |                                                                |
| 05... | 1330 | 2400                                            | 500                                               | 8.4                            | 17.5                                 | 627                                                  | 45                           | 8.6                                 | 110                                                            | --                                                             |
| 13... | 0900 | 2600                                            | 525                                               | 8.5                            | 16.0                                 | 620                                                  | 40                           | 7.5                                 | 94                                                             | 23                                                             |
| 18... | 1045 | 2500                                            | 520                                               | 8.7                            | 15.0                                 | 630                                                  | 30                           | 8.4                                 | 101                                                            | --                                                             |
| 27... | 1300 | 2830                                            | 620                                               | 8.3                            | 15.0                                 | 630                                                  | 280                          | 8.2                                 | 99                                                             | --                                                             |
| SEP   |      |                                                 |                                                   |                                |                                      |                                                      |                              |                                     |                                                                |                                                                |
| 04... | 1015 | 1180                                            | 710                                               | 8.4                            | 16.5                                 | 628                                                  | 55                           | 7.4                                 | 93                                                             | --                                                             |
| 11... | 1315 | 900                                             | 750                                               | 8.7                            | 16.5                                 | 628                                                  | 36                           | 9.6                                 | 120                                                            | --                                                             |
| 18... | 1100 | 900                                             | 780                                               | 8.8                            | 14.0                                 | 628                                                  | 24                           | 8.4                                 | 99                                                             | --                                                             |
| 24... | 1040 | 950                                             | 690                                               | 8.8                            | 15.0                                 | 630                                                  | 17                           | 8.6                                 | 104                                                            | --                                                             |

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

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | HARD-<br>NESS<br>(MG/L<br>AS<br>CAC03) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CAC03) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) |
|-------|------|-------------------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|
| OCT   |      |                                                 |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                               |                                                     |
| 15... | 0915 | 1690                                            | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                              | --                                            | --                                                  |
| JAN   |      |                                                 |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                               |                                                     |
| 22... | 1030 | 800                                             | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                              | --                                            | --                                                  |
| JUN   |      |                                                 |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                               |                                                     |
| 02... | 1120 | 1270                                            | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  | --                                              | --                                            | --                                                  |
| AUG   |      |                                                 |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                 |                                               |                                                     |
| 13... | 0900 | 2600                                            | 190                                    | 49                                           | 16                                                   | 38                                           | 1                                       | 2.8                                                 | 120                                             | 140                                           | 9.3                                                 |



## PLATTE RIVER BASIN

06644550 NORTH PLATTE RIVER AT CASPER, WY--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>15... | --                                                 | --                                                | --                                                                  | --                                                  | --                                                | 0.3                                                  | --                                                            | 0.03                                                 | 0.37                                                 | 0.4                                                                | 0.02                                        |
| JAN<br>22... | --                                                 | --                                                | --                                                                  | --                                                  | --                                                | 0.5                                                  | --                                                            | <0.01                                                | --                                                   | <0.2                                                               | 0.02                                        |
| JUN<br>02... | --                                                 | --                                                | --                                                                  | --                                                  | --                                                | 0.2                                                  | --                                                            | 0.02                                                 | 0.48                                                 | 0.5                                                                | 0.07                                        |
| AUG<br>13... | 0.3                                                | 11                                                | 340                                                                 | 0.46                                                | 2380                                              | 0.2                                                  | 0.1                                                           | 0.03                                                 | 0.97                                                 | 1.0                                                                | 0.07                                        |

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUL<br>23... | 1030 | 2600                                            | 16.0                                 | <0.01                                                           | 0.02                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>13... | 0900 | 2600                                            | 16.0                                 | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>29... | 1405 | 938                                             | 14.5                                 | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

06645000 NORTH PLATTE RIVER BELOW CASPER, WY

LOCATION.--Lat 42°51'40", long 106°12'53", in SE1/4 NW1/4 NW1/4 sec.4, T.33 N., R.78 W., Natrona County, Hydrologic Unit 10180007, at New Mystery Bridge, 0.1 mi upstream from Claude Creek, 0.6 mi north of U.S. Highways 20 and 87, 5.8 mi east of city hall in Casper, and 9.5 mi downstream from Casper Creek.

DRAINAGE AREA.--12,574 mi<sup>2</sup>, of which 831 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--Water years 1947-52, 1957-59, 1968 to current year.

REVISED RECORDS.--WDR WY-76-1: Drainage area.

REMARKS.--Discharge records furnished by U.S. Bureau of Reclamation.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|-----------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT 15... | 1030 | 1690                                            | 645                                               | 8.6                            | 10.0                                 | 635                                                  | 9.6                                 |
| JAN 22... | 1315 | 800                                             | 660                                               | 8.3                            | 0.5                                  | 625                                                  | 12.8                                |
| JUN 02... | 1315 | 1270                                            | 645                                               | 8.5                            | 15.5                                 | 631                                                  | 9.8                                 |
| AUG 14... | 0900 | 2660                                            | 560                                               | 8.4                            | 14.0                                 | 622                                                  | 8.3                                 |

| DATE      | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|-----------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT 15... | 102                                                            | K14                                                            | 0.4                                                  | 0.03                                                 | 0.57                                                 | 0.6                                                                | 0.11                                        |
| JAN 22... | 109                                                            | <1                                                             | 0.6                                                  | 0.10                                                 | 1.2                                                  | 1.3                                                                | 0.07                                        |
| JUN 02... | 119                                                            | K28                                                            | 0.2                                                  | 0.10                                                 | 0.70                                                 | 0.8                                                                | 0.12                                        |
| AUG 14... | 99                                                             | 40                                                             | 0.2                                                  | 0.06                                                 | 0.94                                                 | 1.0                                                                | 0.08                                        |

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

| DATE      | TIME      | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BORON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS B) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) |
|-----------|-----------|-------------------------------------------------|--------------------------------------|---------------------------------------------------|--------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|
| OCT 17... | 0930 1700 | 10.0                                            | 610                                  | 8.5                                               | 2                              | <100                                         | 70                                           | <1                                         | <10                                          |                                                     |

| DATE      | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|-----------|----------------------------------------------|----------------------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------------|--------------------------------------------|
| OCT 17... | 10                                           | <0.1                                         | <5                                         | 9                                                     | 2                                            | 4                                                   | <1                                           | 2                                                  | <10                                        |

## PLATTE RIVER BASIN

06646000 DEER CREEK IN CANYON, NEAR GLENROCK, WY

LOCATION.--Lat 42°42'42", long 106°01'43", in SW1/4 NE1/4 SE1/4 sec.26, T.32 N., R.77 W., Converse County, Hydrologic Unit 10180007, on left bank 500 ft upstream from VR Ditch and 14 mi southwest of Glenrock.

DRAINAGE AREA.--139 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1946 to September 1951, March 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,640 ft above National Geodetic Vertical Datum of 1929, from topographic map. May 1946 to September 1951, at same site and datum.

REMARKS.--Estimated daily discharges: Nov. 3, 4, 7-16, 18, 20, 23-27, Dec. 1 to Jan. 25, Jan. 30, Feb. 5, 6, 8, 16-28, and Mar. 1-3, 20-31. Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

AVERAGE DISCHARGE.--7 years (water years 1947-51, 1986-87), 51.7 ft<sup>3</sup>/s, 37,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,200 ft<sup>3</sup>/s, June 10, 1986, gage height, 9.42 ft; minimum daily, 1.3 ft<sup>3</sup>/s, Aug. 19, 30, 31, 1951.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 12, 1970, reached a discharge of 14,200 ft<sup>3</sup>/s at Deer Creek below Millar Wasteway, at Glenrock (sta 06646600), 16.5 mi downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Apr. 17 | 2230 | *1,470                         | *7.54            | Apr. 23 | 2230 | 844                            | 6.44             |

Minimum daily discharge, 2.7 ft<sup>3</sup>/s, Aug. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|---------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| 1           | 8.8   | 16      | 11    | 7.8   | 9.8   | 9.4   | 20    | 451  | 71   | 14    | 7.2   | 3.9   |
| 2           | 13    | 14      | 14    | 7.3   | 9.9   | 9.9   | 21    | 414  | 66   | 12    | 5.9   | 3.8   |
| 3           | 18    | 14      | 14    | 7.0   | 9.9   | 10    | 22    | 383  | 62   | 13    | 5.1   | 3.6   |
| 4           | 16    | 14      | 12    | 7.5   | 9.9   | 11    | 29    | 302  | 58   | 12    | 4.6   | 4.0   |
| 5           | 15    | 15      | 14    | 8.0   | 9.7   | 13    | 45    | 262  | 51   | 11    | 4.2   | 5.3   |
| 6           | 14    | 16      | 14    | 7.6   | 9.5   | 17    | 60    | 231  | 47   | 10    | 3.9   | 5.5   |
| 7           | 12    | 15      | 13    | 7.3   | 10    | 22    | 77    | 207  | 43   | 9.7   | 4.2   | 5.2   |
| 8           | 11    | 13      | 11    | 7.0   | 10    | 26    | 125   | 188  | 50   | 8.3   | 5.7   | 4.9   |
| 9           | 11    | 11      | 9.8   | 6.6   | 11    | 25    | 205   | 173  | 56   | 7.8   | 5.6   | 4.6   |
| 10          | 10    | 9.5     | 8.6   | 6.8   | 11    | 24    | 191   | 156  | 57   | 7.3   | 5.1   | 4.5   |
| 11          | 12    | 12      | 9.4   | 7.2   | 11    | 26    | 209   | 153  | 42   | 7.5   | 4.1   | 4.5   |
| 12          | 11    | 12      | 9.7   | 7.8   | 11    | 24    | 242   | 145  | 34   | 7.8   | 3.8   | 4.6   |
| 13          | 12    | 12      | 10    | 8.2   | 12    | 25    | 180   | 121  | 30   | 7.8   | 3.8   | 4.6   |
| 14          | 12    | 13      | 9.6   | 8.0   | 15    | 35    | 156   | 110  | 27   | 7.9   | 3.6   | 4.4   |
| 15          | 12    | 15      | 9.2   | 7.5   | 14    | 35    | 293   | 98   | 27   | 7.9   | 3.5   | 4.3   |
| 16          | 11    | 16      | 9.8   | 7.1   | 12    | 34    | 615   | 99   | 26   | 6.7   | 3.3   | 4.3   |
| 17          | 11    | 17      | 9.3   | 7.3   | 11    | 28    | 868   | 112  | 23   | 6.7   | 3.2   | 4.7   |
| 18          | 10    | 16      | 8.7   | 7.6   | 11    | 27    | 929   | 117  | 20   | 11    | 3.2   | 4.7   |
| 19          | 10    | 21      | 9.4   | 7.9   | 10    | 26    | 647   | 84   | 18   | 11    | 3.2   | 4.7   |
| 20          | 10    | 17      | 9.6   | 7.6   | 9.7   | 25    | 276   | 93   | 18   | 7.4   | 3.0   | 4.7   |
| 21          | 11    | 21      | 9.3   | 7.9   | 10    | 21    | 305   | 96   | 16   | 6.4   | 2.7   | 4.7   |
| 22          | 20    | 23      | 8.8   | 8.1   | 11    | 18    | 391   | 113  | 15   | 6.2   | 2.7   | 4.7   |
| 23          | 32    | 16      | 8.6   | 8.4   | 12    | 17    | 541   | 88   | 14   | 5.5   | 3.2   | 4.7   |
| 24          | 22    | 18      | 8.4   | 8.6   | 11    | 16    | 601   | 103  | 14   | 5.3   | 4.5   | 4.7   |
| 25          | 18    | 15      | 8.1   | 8.8   | 11    | 17    | 613   | 105  | 14   | 4.7   | 6.2   | 4.7   |
| 26          | 16    | 13      | 8.0   | 9.0   | 9.8   | 19    | 627   | 90   | 12   | 4.1   | 7.0   | 4.6   |
| 27          | 15    | 15      | 8.2   | 9.1   | 9.1   | 20    | 660   | 96   | 12   | 5.4   | 6.9   | 4.5   |
| 28          | 15    | 16      | 8.2   | 9.5   | 8.9   | 18    | 588   | 118  | 11   | 6.9   | 5.8   | 4.5   |
| 29          | 14    | 16      | 8.3   | 9.9   | ---   | 15    | 535   | 102  | 13   | 10    | 4.9   | 4.5   |
| 30          | 14    | 15      | 8.4   | 9.6   | ---   | 16    | 501   | 91   | 15   | 9.0   | 4.3   | 4.5   |
| 31          | 17    | ---     | 8.2   | 9.9   | ---   | 18    | ---   | 80   | ---  | 11    | 4.1   | ---   |
| TOTAL       | 433.8 | 456.5   | 308.6 | 247.9 | 300.2 | 647.3 | 10572 | 4981 | 962  | 261.3 | 138.5 | 136.9 |
| MEAN        | 14.0  | 15.2    | 9.95  | 8.00  | 10.7  | 20.9  | 352   | 161  | 32.1 | 8.43  | 4.47  | 4.56  |
| MAX         | 32    | 23      | 14    | 9.9   | 15    | 35    | 929   | 451  | 71   | 14    | 7.2   | 5.5   |
| MIN         | 8.8   | 9.5     | 8.0   | 6.6   | 8.9   | 9.4   | 20    | 80   | 11   | 4.1   | 2.7   | 3.6   |
| AC-FT       | 860   | 905     | 612   | 492   | 595   | 1280  | 20970 | 9880 | 1910 | 518   | 275   | 272   |
| CAL YR 1986 | TOTAL | 27397.7 |       | MEAN  | 75.1  | MAX   | 1920  | MIN  | 5.9  | AC-FT | 54340 |       |
| WTR YR 1987 | TOTAL | 19446.0 |       | MEAN  | 53.3  | MAX   | 929   | MIN  | 2.7  | AC-FT | 38570 |       |

06646000 DEER CREEK IN CANYON, NEAR GLENROCK, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1986 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | TUR-<br>BID-<br>ITY<br>(NTU) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------|----------------------------------------------|
| OCT<br>16... | 1305 | 11                                              | 235                                               | 8.3                            | 8.0                                  | 622                                                  | 1.5                          | 10.8                                | 112                                                            | K1                                                             | 120                                    | 34                                           |
| NOV<br>26... | 0820 | 5.5                                             | 255                                               | 8.5                            | 0.0                                  | 620                                                  | 2.5                          | 13.4                                | 113                                                            | 22                                                             | 120                                    | 32                                           |
| DEC<br>19... | 1320 | 9.5                                             | 251                                               | 7.9                            | 0.0                                  | 615                                                  | 1.7                          | 11.8                                | 100                                                            | K6                                                             | 110                                    | 31                                           |
| FEB<br>09... | 0930 | 11                                              | 280                                               | 8.2                            | 1.0                                  | 619                                                  | 2.4                          | 11.6                                | 101                                                            | K11                                                            | 110                                    | 30                                           |
| MAR<br>19... | 0930 | 22                                              | 185                                               | 8.4                            | 3.5                                  | 620                                                  | 5.5                          | 11.2                                | 104                                                            | K1                                                             | 83                                     | 24                                           |
| APR<br>17... | 1415 | 820                                             | 81                                                | 8.4                            | 7.0                                  | 620                                                  | 24                           | 10.2                                | 103                                                            | K12                                                            | 32                                     | 10                                           |
| MAY<br>12... | 1715 | 143                                             | 104                                               | 7.7                            | 15.0                                 | 615                                                  | 13                           | 8.1                                 | 100                                                            | K5                                                             | 47                                     | 14                                           |
| JUN<br>17... | 1240 | 23                                              | 177                                               | 8.2                            | 18.0                                 | 620                                                  | 1.4                          | 7.7                                 | 100                                                            | K1                                                             | 80                                     | 24                                           |
| JUL<br>30... | 1250 | 7.9                                             | 237                                               | 8.4                            | 22.5                                 | 620                                                  | 1.2                          | 7.6                                 | 109                                                            | 40                                                             | 110                                    | 32                                           |
| SEP<br>14... | 1100 | 4.3                                             | 282                                               | 8.5                            | 13.0                                 | 615                                                  | --                           | 8.6                                 | 102                                                            | <1                                                             | 130                                    | 38                                           |

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

| DATE         | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) |
|--------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|
| OCT<br>16... | 7.8                                                  | 4.8                                          | 0.2                                     | 0.5                                                 | 120                                             | 4.1                                           | 1.5                                                 | 0.3                                                | 12                                                | 148                                                                | 140                                                                 | 0.20                                                |
| NOV<br>26... | 9.0                                                  | 7.0                                          | 0.3                                     | 0.4                                                 | 120                                             | 5.5                                           | 1.3                                                 | 0.1                                                | 14                                                | 152                                                                | 140                                                                 | 0.21                                                |
| DEC<br>19... | 7.9                                                  | 5.0                                          | 0.2                                     | 0.9                                                 | 110                                             | 0.9                                           | 1.4                                                 | 0.3                                                | 14                                                | 160                                                                | 130                                                                 | 0.22                                                |
| FEB<br>09... | 7.7                                                  | 5.3                                          | 0.2                                     | 0.8                                                 | 110                                             | 4.8                                           | 1.3                                                 | 0.2                                                | 15                                                | 148                                                                | 130                                                                 | 0.20                                                |
| MAR<br>19... | 5.7                                                  | 4.7                                          | 0.2                                     | 1.1                                                 | 90                                              | 4.9                                           | 1.0                                                 | 0.2                                                | 16                                                | 120                                                                | 110                                                                 | 0.16                                                |
| APR<br>17... | 1.6                                                  | 2.1                                          | 0.2                                     | 1.8                                                 | 34                                              | 1.6                                           | 0.60                                                | 0.1                                                | 8.1                                               | 68                                                                 | 46                                                                  | 0.09                                                |
| MAY<br>12... | 2.9                                                  | 3.5                                          | 0.2                                     | 0.6                                                 | 45                                              | 3.5                                           | 1.3                                                 | 0.2                                                | 16                                                | 92                                                                 | 69                                                                  | 0.13                                                |
| JUN<br>17... | 4.8                                                  | 4.7                                          | 0.2                                     | 0.7                                                 | 83                                              | <1.0                                          | 1.4                                                 | 0.2                                                | 12                                                | 124                                                                | 98                                                                  | 0.17                                                |
| JUL<br>30... | 8.1                                                  | 4.9                                          | 0.2                                     | 1.5                                                 | 121                                             | 7.1                                           | 1.5                                                 | 0.3                                                | 11                                                | 136                                                                | 140                                                                 | 0.18                                                |
| SEP<br>14... | 9.5                                                  | 4.9                                          | 0.2                                     | 1.2                                                 | 130                                             | 4.2                                           | 2.0                                                 | 0.2                                                | 9.7                                               | 168                                                                | 150                                                                 | 0.23                                                |

06646000 DEER CREEK IN CANYON, NEAR GLENROCK, WY--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | SEDI-<br>MENT,<br>SUS-<br>PENDEDED<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDEDED<br>(T/DAY) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|--------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|----------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------|
| OCT<br>16... | 4.4                                               | <0.1                                                 | <0.1                                                          | 0.02                                                 | 0.38                                                 | 0.4                                                                | <0.01                                       | 3                                            | 0.09                                                             | <1                                                  | --                                                            |
| NOV<br>26... | 2.3                                               | <0.1                                                 | 0.1                                                           | <0.01                                                | --                                                   | 0.3                                                                | 0.02                                        | 8                                            | 0.12                                                             | --                                                  | --                                                            |
| DEC<br>19... | 4.1                                               | <0.1                                                 | 0.1                                                           | <0.01                                                | --                                                   | 0.5                                                                | 0.01                                        | 4                                            | 0.10                                                             | --                                                  | --                                                            |
| FEB<br>09... | 4.4                                               | 0.3                                                  | 0.2                                                           | 0.02                                                 | 0.18                                                 | 0.2                                                                | 0.02                                        | 1                                            | 0.03                                                             | --                                                  | --                                                            |
| MAR<br>19... | 7.1                                               | 0.1                                                  | 0.1                                                           | <0.01                                                | --                                                   | 0.5                                                                | 0.04                                        | 2                                            | 0.12                                                             | --                                                  | --                                                            |
| APR<br>17... | 151                                               | <0.1                                                 | <0.1                                                          | 0.04                                                 | 0.66                                                 | 0.7                                                                | 0.17                                        | 71                                           | 157                                                              | --                                                  | 55                                                            |
| MAY<br>12... | 36                                                | <0.1                                                 | <0.1                                                          | 0.02                                                 | 0.58                                                 | 0.6                                                                | 0.04                                        | 10                                           | 3.9                                                              | --                                                  | --                                                            |
| JUN<br>17... | 7.7                                               | <0.1                                                 | <0.1                                                          | 0.02                                                 | 0.88                                                 | 0.9                                                                | 0.03                                        | 24                                           | 1.5                                                              | --                                                  | --                                                            |
| JUL<br>30... | 2.9                                               | <0.1                                                 | <0.1                                                          | <0.01                                                | --                                                   | 0.6                                                                | 0.02                                        | 5                                            | 0.11                                                             | <1                                                  | --                                                            |
| SEP<br>14... | 2.0                                               | <0.1                                                 | <0.1                                                          | <0.01                                                | --                                                   | 0.2                                                                | 0.01                                        | 2                                            | 0.02                                                             | --                                                  | --                                                            |

06646600 DEER CREEK BELOW MILLAR WASTEWAY, AT GLENROCK, WY

LOCATION.--Lat 42°51'50", long 105°51'56", in SW1/4 NW1/4 NW1/4 sec.4, T.33 N., R.75 W., Converse County, Hydrologic Unit 10180007, on right bank in Glenrock, 800 ft downstream from bridge on U.S. Highways 20 and 87, and 0.5 mi upstream from mouth.

DRAINAGE AREA.--213 mi<sup>2</sup>.

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

REVISED RECORDS.--WSP 2118: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,980 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 9 -14, Dec. 1, 4-6, 8-31, Jan. 1-31, Feb. 1, 5-7, 17-28, Mar. 1, 2, 27-31. Records good except those for estimated daily discharges, which are poor. One small reservoir upstream from station, capacity, about 60 acre-ft, for irrigation. Diversions upstream from station for irrigation of about 3,700 acres, of which about 400 acres are downstream from station. Water is diverted at times to Millar ditch 0.3 mi upstream and bypasses station.

AVERAGE DISCHARGE.--26 years, 70.3 ft<sup>3</sup>/s, 50,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,200 ft<sup>3</sup>/s, June 12, 1970, gage height, 9.45 ft; no flow at times in 1961-63, 1965, 1977, 1978, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Apr. 18 | 0300 | *1,500                         | *6.31            | Apr. 27 | 0200 | 916                            | 5.41             |

Minimum daily discharge, 3.3 ft<sup>3</sup>/s, Aug. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN  | FEB  | MAR  | APR   | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|---------|------|------|------|------|-------|------|------|-------|-------|-------|
| 1           | 19    | 30      | 28   | 16   | 24   | 21   | 39    | 407  | 55   | 18    | 7.0   | 7.8   |
| 2           | 30    | 30      | 28   | 16   | 26   | 23   | 35    | 363  | 39   | 16    | 6.7   | 8.3   |
| 3           | 32    | 29      | 29   | 17   | 23   | 25   | 35    | 352  | 34   | 16    | 6.3   | 7.4   |
| 4           | 31    | 29      | 24   | 18   | 23   | 27   | 40    | 249  | 30   | 16    | 5.9   | 9.1   |
| 5           | 28    | 28      | 26   | 19   | 22   | 29   | 46    | 180  | 27   | 16    | 4.7   | 12    |
| 6           | 27    | 30      | 28   | 18   | 22   | 30   | 64    | 148  | 25   | 17    | 4.4   | 12    |
| 7           | 26    | 34      | 29   | 16   | 22   | 34   | 78    | 121  | 23   | 16    | 3.8   | 12    |
| 8           | 25    | 30      | 27   | 15   | 23   | 40   | 97    | 98   | 31   | 15    | 3.6   | 12    |
| 9           | 24    | 27      | 19   | 16   | 23   | 40   | 191   | 88   | 42   | 14    | 3.6   | 12    |
| 10          | 23    | 24      | 21   | 17   | 23   | 40   | 183   | 82   | 69   | 13    | 3.6   | 12    |
| 11          | 27    | 26      | 23   | 20   | 23   | 40   | 207   | 71   | 63   | 13    | 3.6   | 12    |
| 12          | 27    | 28      | 24   | 24   | 23   | 40   | 243   | 74   | 49   | 12    | 3.6   | 12    |
| 13          | 27    | 29      | 25   | 23   | 24   | 39   | 201   | 46   | 41   | 12    | 3.6   | 14    |
| 14          | 26    | 32      | 23   | 19   | 29   | 49   | 166   | 19   | 35   | 12    | 3.6   | 13    |
| 15          | 26    | 34      | 20   | 17   | 30   | 51   | 209   | 18   | 30   | 11    | 3.6   | 13    |
| 16          | 26    | 33      | 22   | 14   | 23   | 51   | 507   | 16   | 23   | 11    | 3.6   | 13    |
| 17          | 26    | 32      | 19   | 16   | 22   | 46   | 743   | 20   | 23   | 12    | 3.3   | 13    |
| 18          | 26    | 32      | 19   | 17   | 21   | 39   | 964   | 30   | 21   | 14    | 3.8   | 13    |
| 19          | 25    | 34      | 20   | 18   | 20   | 41   | 921   | 24   | 19   | 12    | 3.9   | 16    |
| 20          | 25    | 35      | 21   | 17   | 19   | 42   | 359   | 20   | 20   | 10    | 4.1   | 17    |
| 21          | 25    | 34      | 21   | 18   | 20   | 38   | 302   | 24   | 21   | 8.5   | 4.4   | 13    |
| 22          | 27    | 38      | 20   | 19   | 21   | 35   | 380   | 25   | 25   | 9.4   | 5.3   | 13    |
| 23          | 40    | 34      | 18   | 20   | 23   | 39   | 526   | 25   | 14   | 8.9   | 5.3   | 13    |
| 24          | 40    | 31      | 18   | 20   | 21   | 39   | 668   | 24   | 13   | 8.4   | 7.0   | 13    |
| 25          | 35    | 34      | 17   | 21   | 21   | 35   | 680   | 45   | 13   | 8.8   | 8.3   | 12    |
| 26          | 32    | 31      | 17   | 22   | 20   | 33   | 698   | 43   | 16   | 6.8   | 10    | 12    |
| 27          | 29    | 28      | 16   | 24   | 19   | 32   | 752   | 38   | 17   | 5.3   | 9.6   | 13    |
| 28          | 29    | 29      | 16   | 26   | 19   | 30   | 620   | 39   | 17   | 4.8   | 8.7   | 13    |
| 29          | 27    | 29      | 16   | 24   | ---  | 28   | 504   | 80   | 18   | 8.7   | 8.7   | 13    |
| 30          | 27    | 31      | 15   | 24   | ---  | 30   | 462   | 73   | 18   | 5.6   | 8.3   | 14    |
| 31          | 28    | ---     | 16   | 24   | ---  | 34   | ---   | 63   | ---  | 5.9   | 7.8   | ---   |
| TOTAL       | 865   | 925     | 665  | 595  | 629  | 1120 | 10920 | 2905 | 871  | 357.1 | 169.7 | 369.6 |
| MEAN        | 27.9  | 30.8    | 21.5 | 19.2 | 22.5 | 36.1 | 364   | 93.7 | 29.0 | 11.5  | 5.47  | 12.3  |
| MAX         | 40    | 38      | 29   | 26   | 30   | 51   | 964   | 407  | 69   | 18    | 10    | 17    |
| MIN         | 19    | 24      | 15   | 14   | 19   | 21   | 35    | 16   | 13   | 4.8   | 3.3   | 7.4   |
| AC-FT       | 1720  | 1830    | 1320 | 1180 | 1250 | 2220 | 21660 | 5760 | 1730 | 708   | 337   | 733   |
| CAL YR 1986 | TOTAL | 27498.1 |      | MEAN | 75.3 | MAX  | 2250  | MIN  | 1.6  | AC-FT | 54540 |       |
| WTR YR 1987 | TOTAL | 20391.4 |      | MEAN | 55.9 | MAX  | 964   | MIN  | 3.3  | AC-FT | 40450 |       |



## PLATTE RIVER BASIN

06646800 NORTH PLATTE RIVER NEAR GLENROCK, WY

LOCATION.--Lat 42°50'10", long 105°45'30", in NW1/4 NE1/4 sec.17, T.33 N., R.74 W., Converse County, Hydrologic Unit 10180007, on left bank 0.8 mi downstream from Sand Creek, 1.0 mi downstream from Dave Johnston Power Plant, and 5.8 mi east of Glenrock city limits.

DRAINAGE AREA.--13,538 mi<sup>2</sup>, of which 1,173 mi<sup>2</sup> is probably noncontributing.

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

REVISED RECORDS.--WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,920 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1965, at datum 1.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Seminoe, Pathfinder, and Alcova Reservoirs. (See sta 06635500, 06640500, 06641500.) Slight regulation 1.0 mi upstream by storage pond for Dave Johnston Power Plant, capacity, 755 acre-ft. Natural flow of stream affected by transbasin diversions, storage reservoirs, power development, diversions for irrigation, and return flow from irrigated areas. U.S. Army Corp of Engineers satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft<sup>3</sup>/s, May 14, 1965, gage height, 7.10 ft, present datum; minimum daily, 176 ft<sup>3</sup>/s, Dec. 11, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,130 ft<sup>3</sup>/s, Aug. 25, gage height, 3.47 ft; minimum daily, 437 ft<sup>3</sup>/s, Jan. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL    | AUG     | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|--------|---------|-------|
| 1           | 1220  | 2400   | 1180  | 875   | 1080  | 1160  | 573   | 1150  | 1370  | 1780   | 2190    | 1630  |
| 2           | 1450  | 2440   | 1160  | 775   | 1150  | 1410  | 617   | 1080  | 1320  | 1740   | 2180    | 1440  |
| 3           | 2100  | 2590   | 1130  | 924   | 1170  | 1390  | 604   | 1090  | 1310  | 1700   | 2150    | 1280  |
| 4           | 1780  | 2430   | 1140  | 956   | 1210  | 1200  | 598   | 952   | 1370  | 1720   | 2110    | 1150  |
| 5           | 1760  | 2150   | 1100  | 1210  | 1070  | 1360  | 670   | 822   | 1470  | 1720   | 2160    | 1210  |
| 6           | 1760  | 2150   | 1090  | 1010  | 1090  | 1690  | 1500  | 747   | 1600  | 1680   | 2230    | 1100  |
| 7           | 1750  | 2120   | 1120  | 902   | 1140  | 1930  | 2150  | 673   | 1580  | 1670   | 2270    | 1100  |
| 8           | 1720  | 2100   | 1090  | 822   | 1160  | 2270  | 1510  | 605   | 1660  | 1820   | 2400    | 1040  |
| 9           | 1720  | 2090   | 966   | 655   | 1140  | 2200  | 1140  | 589   | 1790  | 2150   | 2570    | 1010  |
| 10          | 1710  | 2080   | 644   | 586   | 1220  | 1650  | 1170  | 567   | 1680  | 2310   | 2570    | 951   |
| 11          | 1720  | 2070   | 714   | 609   | 1350  | 1180  | 1060  | 558   | 1590  | 2370   | 2440    | 932   |
| 12          | 1720  | 2050   | 968   | 844   | 1410  | 1050  | 1020  | 551   | 1580  | 2370   | 2260    | 911   |
| 13          | 1700  | 2020   | 1110  | 1030  | 1370  | 967   | 956   | 521   | 1590  | 2360   | 2390    | 896   |
| 14          | 1720  | 2120   | 1170  | 749   | 1330  | 1010  | 879   | 475   | 1550  | 2320   | 2410    | 884   |
| 15          | 1720  | 2100   | 1100  | 600   | 1390  | 1180  | 850   | 469   | 1570  | 2280   | 2410    | 874   |
| 16          | 1730  | 2150   | 1140  | 439   | 1230  | 1390  | 1140  | 469   | 1410  | 2260   | 2410    | 822   |
| 17          | 1730  | 2150   | 1030  | 437   | 1190  | 1210  | 1590  | 480   | 1170  | 2280   | 2390    | 827   |
| 18          | 1680  | 2140   | 923   | 458   | 1140  | 1010  | 1910  | 885   | 1280  | 2390   | 2330    | 826   |
| 19          | 1530  | 2150   | 927   | 795   | 1140  | 927   | 1920  | 856   | 1310  | 2310   | 2350    | 833   |
| 20          | 1510  | 2130   | 1060  | 861   | 1140  | 908   | 1420  | 892   | 1350  | 2290   | 2390    | 826   |
| 21          | 1380  | 2130   | 995   | 852   | 1120  | 838   | 1170  | 1310  | 1590  | 2260   | 2390    | 819   |
| 22          | 1340  | 2180   | 1020  | 916   | 1100  | 808   | 1120  | 1350  | 1600  | 2310   | 2380    | 806   |
| 23          | 1410  | 2120   | 1070  | 953   | 1130  | 793   | 1230  | 1350  | 1590  | 2250   | 2390    | 855   |
| 24          | 1370  | 2110   | 1010  | 993   | 1060  | 770   | 1410  | 1390  | 1600  | 2210   | 2390    | 898   |
| 25          | 1260  | 1990   | 928   | 1030  | 1010  | 752   | 1470  | 1410  | 1660  | 2200   | 2570    | 880   |
| 26          | 1180  | 1300   | 898   | 1050  | 859   | 649   | 1440  | 1400  | 1690  | 2200   | 2600    | 870   |
| 27          | 1150  | 1210   | 1070  | 1100  | 772   | 619   | 1520  | 1390  | 1720  | 2200   | 2360    | 846   |
| 28          | 1110  | 1180   | 1040  | 1120  | 973   | 610   | 1430  | 1390  | 1780  | 2190   | 2200    | 890   |
| 29          | 1110  | 1180   | 947   | 1090  | ---   | 517   | 1310  | 1440  | 1810  | 2390   | 2090    | 881   |
| 30          | 1390  | 1200   | 1070  | 1040  | ---   | 499   | 1210  | 1440  | 1820  | 2340   | 1960    | 893   |
| 31          | 2280  | ---    | 1000  | 1080  | ---   | 583   | ---   | 1390  | ---   | 2230   | 1780    | ---   |
| TOTAL       | 48710 | 60230  | 31810 | 26761 | 32144 | 34530 | 36587 | 29691 | 46410 | 66300  | 71720   | 29180 |
| MEAN        | 1571  | 2008   | 1026  | 863   | 1148  | 1114  | 1220  | 958   | 1547  | 2139   | 2314    | 973   |
| MAX         | 2280  | 2590   | 1180  | 1210  | 1410  | 2270  | 2150  | 1440  | 1820  | 2390   | 2600    | 1630  |
| MIN         | 1110  | 1180   | 644   | 437   | 772   | 499   | 573   | 469   | 1170  | 1670   | 1780    | 806   |
| AC-FT       | 96620 | 119500 | 63100 | 53080 | 63760 | 68490 | 72570 | 58890 | 92050 | 131500 | 142300  | 57880 |
| CAL YR 1986 | TOTAL | 781740 |       | MEAN  | 2142  | MAX   | 5760  | MIN   | 414   | AC-FT  | 1551000 |       |
| WTR YR 1987 | TOTAL | 514073 |       | MEAN  | 1408  | MAX   | 2600  | MIN   | 437   | AC-FT  | 1020000 |       |

06647500 BOX ELDER CREEK AT BOXELDER, WY

LOCATION.--Lat 42°36'44", long 105°51'29", in NE1/4 NE1/4 SW1/4 sec.32, T.31 N., R.75 W., Converse County, Hydrologic Unit 10180007, on left bank at Hiser Ranch (old Boxelder Post Office), 0.8 mi downstream from Snowshoe Creek, and 17 mi south of Glenrock.

DRAINAGE AREA.--63.0 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1946 to September 1951, October 1961 to September 1967, October 1971 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,710 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 7, 1946, nonrecording gage, and June 8, 1946, to July 21, 1976, water-stage recorder at site 400 ft downstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 8-14, 18-20, 30, Dec. 1 to Feb. 17, Mar. 5-10, 21-30, and Apr. 1, 2. Records good except those for estimated daily discharges, which are poor. Diversions upstream from station for irrigation of about 60 acres, of which about 40 acres are downstream from station.

AVERAGE DISCHARGE.--27 years, 37.0 ft<sup>3</sup>/s, 26,830 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,530 ft<sup>3</sup>/s, May 14, 1965, gage height, 8.58 ft, site and datum then in use; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| Apr. 27 | 0100 | *376                           | *3.84            | No other peak greater than base discharge. |      |                                |                  |

Minimum daily discharge, 0.11 ft<sup>3</sup>/s, Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV      | DEC  | JAN  | FEB  | MAR   | APR    | MAY  | JUN   | JUL   | AUG   | SEP  |
|-------------|-------|----------|------|------|------|-------|--------|------|-------|-------|-------|------|
| 1           | 2.4   | 4.7      | 4.2  | 2.0  | 2.9  | 2.6   | 5.6    | 233  | 37    | 6.7   | 2.1   | .21  |
| 2           | 3.2   | 4.0      | 3.9  | 2.0  | 2.9  | 2.5   | 5.4    | 215  | 35    | 5.8   | 1.5   | .19  |
| 3           | 4.6   | 4.2      | 3.6  | 2.1  | 2.9  | 2.5   | 6.8    | 190  | 33    | 7.0   | 1.0   | .16  |
| 4           | 4.2   | 4.3      | 3.4  | 2.1  | 2.8  | 2.6   | 11     | 153  | 31    | 6.4   | .88   | .25  |
| 5           | 3.7   | 4.1      | 3.5  | 2.0  | 2.7  | 3.5   | 16     | 131  | 28    | 5.6   | .67   | .44  |
| 6           | 3.6   | 4.4      | 3.3  | 1.9  | 2.8  | 4.9   | 21     | 112  | 25    | 4.6   | .66   | .30  |
| 7           | 3.2   | 4.2      | 3.0  | 1.9  | 2.9  | 8.1   | 32     | 98   | 25    | 4.2   | .98   | .23  |
| 8           | 3.1   | 4.0      | 2.7  | 1.8  | 3.0  | 7.4   | 58     | 86   | 37    | 3.8   | 1.0   | .29  |
| 9           | 2.7   | 3.8      | 2.3  | 1.8  | 3.1  | 6.8   | 65     | 77   | 37    | 3.4   | .84   | .26  |
| 10          | 2.7   | 3.7      | 2.4  | 1.9  | 3.2  | 6.2   | 51     | 69   | 30    | 3.1   | .62   | .24  |
| 11          | 3.3   | 3.7      | 2.6  | 2.0  | 3.4  | 5.9   | 44     | 66   | 24    | 2.9   | .50   | .22  |
| 12          | 2.9   | 3.7      | 2.7  | 2.2  | 3.7  | 5.7   | 44     | 62   | 21    | 2.7   | .41   | .21  |
| 13          | 3.0   | 4.1      | 2.7  | 2.3  | 3.8  | 8.8   | 41     | 53   | 18    | 2.5   | .40   | .21  |
| 14          | 3.1   | 4.6      | 2.6  | 2.2  | 3.9  | 10    | 43     | 47   | 17    | 2.6   | .32   | .18  |
| 15          | 3.1   | 5.3      | 2.5  | 2.1  | 3.9  | 7.6   | 55     | 42   | 17    | 2.5   | .28   | .17  |
| 16          | 3.0   | 5.1      | 2.4  | 2.0  | 3.8  | 6.7   | 70     | 42   | 15    | 1.9   | .24   | .17  |
| 17          | 2.8   | 5.2      | 2.2  | 2.0  | 3.7  | 6.2   | 98     | 49   | 13    | 3.3   | .21   | .18  |
| 18          | 2.7   | 5.0      | 2.3  | 2.1  | 3.6  | 6.3   | 132    | 52   | 12    | 15    | .18   | .20  |
| 19          | 2.7   | 4.6      | 2.2  | 2.0  | 3.4  | 6.2   | 139    | 37   | 11    | 5.8   | .15   | .21  |
| 20          | 2.9   | 5.0      | 2.1  | 2.0  | 3.2  | 6.2   | 109    | 40   | 11    | 3.9   | .12   | .21  |
| 21          | 3.5   | 5.7      | 2.2  | 2.0  | 3.1  | 6.0   | 115    | 41   | 9.3   | 3.0   | .11   | .21  |
| 22          | 5.6   | 5.7      | 2.2  | 2.2  | 3.0  | 6.2   | 127    | 44   | 8.5   | 2.6   | .12   | .21  |
| 23          | 7.6   | 4.8      | 2.1  | 2.2  | 3.1  | 5.8   | 153    | 35   | 8.0   | 2.1   | .13   | .21  |
| 24          | 6.7   | 5.7      | 2.0  | 2.3  | 2.9  | 5.8   | 183    | 37   | 7.6   | 1.7   | .18   | .20  |
| 25          | 5.4   | 4.8      | 1.9  | 2.4  | 2.9  | 5.8   | 200    | 44   | 7.2   | 1.4   | .42   | .19  |
| 26          | 4.8   | 4.4      | 2.0  | 2.6  | 2.8  | 5.8   | 231    | 46   | 6.6   | 1.2   | .88   | .19  |
| 27          | 4.5   | 4.7      | 2.0  | 2.8  | 2.7  | 5.6   | 305    | 50   | 6.0   | 1.1   | .66   | .17  |
| 28          | 4.4   | 4.8      | 2.1  | 2.9  | 2.7  | 5.3   | 280    | 53   | 5.3   | 1.2   | .50   | .18  |
| 29          | 4.3   | 5.0      | 2.1  | 3.0  | ---  | 5.1   | 267    | 51   | 8.9   | 1.7   | .39   | .19  |
| 30          | 4.2   | 4.6      | 2.1  | 2.9  | ---  | 5.4   | 252    | 48   | 8.4   | 2.7   | .30   | .19  |
| 31          | 4.5   | ---      | 2.0  | 2.9  | ---  | 6.0   | ---    | 41   | ---   | 3.3   | .24   | ---  |
| TOTAL       | 118.4 | 137.9    | 79.3 | 68.6 | 88.8 | 179.5 | 3159.8 | 2344 | 552.8 | 115.7 | 16.99 | 6.47 |
| MEAN        | 3.82  | 4.60     | 2.56 | 2.21 | 3.17 | 5.79  | 105    | 75.6 | 18.4  | 3.73  | .55   | .22  |
| MAX         | 7.6   | 5.7      | 4.2  | 3.0  | 3.9  | 10    | 305    | 233  | 37    | 15    | 2.1   | .44  |
| MIN         | 2.4   | 3.7      | 1.9  | 1.8  | 2.7  | 2.5   | 5.4    | 35   | 5.3   | 1.1   | .11   | .16  |
| AC-FT       | 235   | 274      | 157  | 136  | 176  | 356   | 6270   | 4650 | 1100  | 229   | 34    | 13   |
| CAL YR 1986 | TOTAL | 15023.81 |      | MEAN | 41.2 | MAX   | 849    | MIN  | .56   | AC-FT | 29800 |      |
| WTR YR 1987 | TOTAL | 6868.26  |      | MEAN | 18.8 | MAX   | 305    | MIN  | .11   | AC-FT | 13620 |      |

06647890 LITTLE BOX ELDER CREEK NEAR CAREYHURST, WY

LOCATION.--Lat 42°45'04", long 105°44'25", in SE1/4 SW1/4 SE1/4 sec.8, T.32 N., R.74 W., Converse County, Hydrologic Unit 10180007, on right bank 4.6 mi southwest of Barber Ranch and 7.6 mi southwest of Careyhurst.

DRAINAGE AREA.--7.18 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder and bedrock control. Elevation of gage is 5,670 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 25, 1980, at site 170 ft downstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 10, 11, Dec. 4, 5, 9-14, 17-19, 25-27, Jan. 1-3, 6-11, 14-23, Feb. 16-28, and Mar. 1, 27-31. Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

AVERAGE DISCHARGE.--13 years, 1.65 ft<sup>3</sup>/s, 1,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 193 ft<sup>3</sup>/s, July 25, 1981, gage height, about 2.11 ft, from rating curve extended above 62 ft<sup>3</sup>/s on basis of weir flow computation of peak flow, but maximum discharge may have been exceeded when log jam that produced maximum gage height on July 25, 1981 broke, releasing an unknown discharge; maximum gage height, 3.70 ft, July 25, 1981 (backwater from log jam), from floodmarks; minimum daily discharge, 0.21 ft<sup>3</sup>/s, Feb. 4, 1985.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8.0 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Apr. 6  | 1830 | 10                                | 1.22                | Apr. 17 | 1815 | *16                               | *1.31               |
| Apr. 11 | 2045 | 12                                | 1.25                | Aug. 25 | 2345 | 9.0                               | 1.19                |

Minimum daily discharge, 0.62 ft<sup>3</sup>/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|
| 1           | .97   | .97    | 1.0   | .65   | .84   | .90   | 2.1   | 3.8  | 1.6   | .99   | .80   | .72   |
| 2           | 1.5   | .93    | .99   | .73   | .83   | .95   | 2.0   | 4.8  | 1.6   | .96   | .77   | .72   |
| 3           | 1.3   | 1.0    | .88   | .78   | .82   | 1.0   | 2.4   | 4.9  | 1.6   | .97   | .77   | .71   |
| 4           | 1.1   | .97    | .83   | .81   | .81   | 1.2   | 3.5   | 3.6  | 1.5   | 1.0   | .77   | .87   |
| 5           | 1.1   | .97    | .89   | .81   | .80   | 1.6   | 4.6   | 3.3  | 1.4   | .94   | .75   | .99   |
| 6           | 1.1   | 1.1    | .97   | .76   | .80   | 2.1   | 6.7   | 3.1  | 1.4   | .97   | .76   | .77   |
| 7           | 1.0   | 1.1    | .96   | .66   | .88   | 2.8   | 6.0   | 3.0  | 1.4   | .92   | .90   | .76   |
| 8           | .99   | 1.0    | .89   | .65   | .87   | 3.3   | 6.2   | 2.9  | 1.6   | .92   | .84   | .77   |
| 9           | 1.1   | .94    | .83   | .70   | .85   | 2.2   | 6.2   | 2.7  | 1.6   | .89   | .78   | .75   |
| 10          | 1.0   | .85    | .73   | .76   | .89   | 1.9   | 4.5   | 2.5  | 1.4   | .91   | .76   | .80   |
| 11          | 1.1   | .93    | .76   | .85   | .94   | 1.8   | 6.3   | 2.5  | 1.3   | .93   | .74   | .79   |
| 12          | 1.1   | 1.0    | .80   | 1.0   | .92   | 1.8   | 5.6   | 2.4  | 1.2   | .90   | .77   | .78   |
| 13          | 1.1   | 1.1    | .85   | .81   | .92   | 2.2   | 4.4   | 2.3  | 1.2   | .86   | .78   | .77   |
| 14          | 1.1   | 1.1    | .91   | .70   | 1.0   | 2.6   | 4.7   | 2.2  | 1.2   | .86   | .77   | .76   |
| 15          | .97   | 1.1    | .97   | .66   | 1.1   | 2.4   | 6.6   | 2.2  | 1.2   | .82   | .77   | .84   |
| 16          | .97   | 1.1    | .97   | .62   | 1.0   | 2.3   | 8.0   | 2.5  | 1.2   | .80   | .75   | .81   |
| 17          | .97   | 1.1    | .89   | .68   | .98   | 2.1   | 9.5   | 2.4  | 1.1   | .90   | .75   | .84   |
| 18          | .97   | 1.1    | .86   | .73   | .92   | 2.1   | 9.4   | 2.2  | 1.1   | .85   | .74   | .81   |
| 19          | .97   | 1.3    | .89   | .78   | .86   | 2.2   | 6.5   | 2.0  | 1.1   | .81   | .70   | .79   |
| 20          | 1.0   | 1.2    | .96   | .81   | .81   | 2.1   | 5.2   | 3.1  | 1.1   | .78   | .66   | .72   |
| 21          | .98   | 1.3    | .91   | .79   | .76   | 2.0   | 5.6   | 2.7  | 1.1   | .78   | .66   | .72   |
| 22          | 1.2   | 1.4    | .94   | .76   | .77   | 2.2   | 6.0   | 2.4  | 1.1   | .77   | .74   | .71   |
| 23          | 1.3   | 1.2    | .90   | .78   | .81   | 2.1   | 6.2   | 2.1  | 1.1   | .76   | .73   | .70   |
| 24          | 1.1   | 1.1    | .84   | .79   | .85   | 2.1   | 6.2   | 2.0  | 1.1   | .76   | .76   | .69   |
| 25          | .97   | 1.1    | .69   | .75   | .82   | 2.0   | 6.0   | 1.9  | 1.1   | .75   | 1.1   | .69   |
| 26          | .97   | 1.1    | .71   | .78   | .81   | 2.0   | 5.8   | 2.0  | 1.0   | .74   | 1.4   | .68   |
| 27          | .97   | 1.1    | .75   | .80   | .82   | 1.9   | 5.6   | 1.8  | 1.0   | .77   | .79   | .68   |
| 28          | .97   | 1.0    | .88   | .88   | .86   | 1.8   | 5.0   | 1.7  | 1.0   | .80   | .78   | .69   |
| 29          | .96   | 1.0    | .81   | .79   | ---   | 1.7   | 4.4   | 1.7  | 1.1   | .88   | .76   | .69   |
| 30          | .99   | 1.1    | .81   | .86   | ---   | 1.8   | 4.0   | 1.7  | 1.0   | .87   | .75   | .72   |
| 31          | .98   | ---    | .70   | .81   | ---   | 1.9   | ---   | 1.7  | ---   | .84   | .73   | ---   |
| TOTAL       | 32.80 | 32.26  | 26.77 | 23.74 | 24.34 | 61.05 | 165.2 | 80.1 | 37.4  | 26.70 | 24.53 | 22.74 |
| MEAN        | 1.06  | 1.08   | .86   | .77   | .87   | 1.97  | 5.51  | 2.58 | 1.25  | .86   | .79   | .76   |
| MAX         | 1.5   | 1.4    | 1.0   | 1.0   | 1.1   | 3.3   | 9.5   | 4.9  | 1.6   | 1.0   | 1.4   | .99   |
| MIN         | .96   | .85    | .69   | .62   | .76   | .90   | 2.0   | 1.7  | 1.0   | .74   | .66   | .68   |
| AC-FT       | 65    | 64     | 53    | 47    | 48    | 121   | 328   | 159  | 74    | 53    | 49    | 45    |
| CAL YR 1986 | TOTAL | 745.84 | MEAN  | 2.04  | MAX   | 25    | MIN   | .64  | AC-FT | 1480  |       |       |
| WTR YR 1987 | TOTAL | 557.63 | MEAN  | 1.53  | MAX   | 9.5   | MIN   | .62  | AC-FT | 1110  |       |       |

06647900 LITTLE BOX ELDER CREEK AT LITTLE BOX ELDER CAVE, NEAR CAREYHURST, WY

LOCATION.--Lat 42°45'38", long 105°43'33", in NE1/4 SE1/4 NW1/4 sec.9, T.32 N., R.74 W., Converse County, Hydrologic Unit 10180007, on left bank 0.3 mi southwest of Little Box Elder Cave, 3.6 mi southwest of Barber Ranch, and 6.6 mi southwest of Careyhurst.

DRAINAGE AREA.--8.47 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder and steel weir control. Elevation of gage is 5,480 ft above National Geodetic Vertical Datum of 1929, from topographic map. Weir plate since Sept. 12, 1985.

REMARKS.--Estimated daily discharges: Nov. 8 to Dec. 3, Dec. 5-15, Feb. 23 to Mar. 6, and Mar. 22 to Apr. 3. Records good except those less than 1.0 ft<sup>3</sup>/s, which are fair and those for estimated daily discharges, which are poor. One small detention reservoir upstream from station.

AVERAGE DISCHARGE.--13 years, 0.60 ft<sup>3</sup>/s, 435 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50 ft<sup>3</sup>/s, May 12, 1984, gage height, 2.02 ft; maximum gage height, 2.26 ft, Apr. 9, 1986; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4.6 ft<sup>3</sup>/s, Apr. 19, gage height, 1.98 ft; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN | FEB | MAR   | APR   | MAY   | JUN   | JUL  | AUG  | SEP |
|-------------|-------|--------|------|-----|-----|-------|-------|-------|-------|------|------|-----|
| 1           | .06   | .13    | .00  | .00 | .00 | .06   | .66   | 3.1   | .72   | .31  | .06  | .01 |
| 2           | .22   | .13    | .00  | .00 | .00 | .06   | .87   | 3.0   | .75   | .29  | .05  | .00 |
| 3           | .31   | .16    | .00  | .00 | .00 | .18   | 1.2   | 3.4   | .75   | .30  | .05  | .00 |
| 4           | .19   | .16    | .00  | .00 | .00 | .29   | 1.6   | 3.3   | .70   | .30  | .04  | .07 |
| 5           | .13   | .13    | .03  | .00 | .00 | .46   | 2.0   | 2.9   | .67   | .29  | .01  | .26 |
| 6           | .10   | .11    | .02  | .00 | .00 | .64   | 2.5   | 2.6   | .56   | .28  | .01  | .06 |
| 7           | .08   | .06    | .01  | .00 | .00 | 1.2   | 2.9   | 2.4   | .59   | .28  | .08  | .01 |
| 8           | .06   | .04    | .00  | .00 | .00 | 1.5   | 2.9   | 2.1   | .70   | .25  | .07  | .01 |
| 9           | .06   | .01    | .00  | .00 | .00 | 1.2   | 3.2   | 1.9   | .70   | .24  | .01  | .04 |
| 10          | .06   | .00    | .00  | .00 | .00 | .84   | 3.1   | 1.8   | .58   | .25  | .00  | .04 |
| 11          | .16   | .00    | .00  | .00 | .00 | .51   | 3.1   | 1.7   | .60   | .25  | .00  | .04 |
| 12          | .13   | .01    | .00  | .00 | .00 | .46   | 3.4   | 1.6   | .48   | .24  | .00  | .03 |
| 13          | .16   | .04    | .00  | .00 | .00 | .64   | 3.2   | 1.4   | .50   | .23  | .00  | .01 |
| 14          | .16   | .07    | .00  | .00 | .00 | 1.0   | 2.9   | 1.4   | .55   | .22  | .00  | .01 |
| 15          | .13   | .11    | .00  | .00 | .00 | .92   | 2.9   | 1.4   | .48   | .17  | .00  | .02 |
| 16          | .10   | .08    | .00  | .00 | .00 | .92   | 3.3   | 1.4   | .39   | .15  | .01  | .03 |
| 17          | .10   | .06    | .00  | .00 | .00 | .92   | 3.7   | 1.7   | .43   | .18  | .01  | .04 |
| 18          | .10   | .05    | .00  | .00 | .00 | .84   | 4.2   | 1.1   | .45   | .18  | .01  | .03 |
| 19          | .10   | .07    | .00  | .00 | .00 | .84   | 4.4   | 1.3   | .43   | .14  | .01  | .02 |
| 20          | .10   | .09    | .00  | .00 | .00 | .33   | 4.3   | 1.9   | .40   | .12  | .00  | .01 |
| 21          | .10   | .07    | .00  | .00 | .00 | .17   | 4.0   | 1.9   | .40   | .10  | .00  | .00 |
| 22          | .16   | .04    | .00  | .00 | .00 | .35   | 3.9   | 1.8   | .38   | .09  | .04  | .00 |
| 23          | .35   | .03    | .00  | .00 | .00 | .61   | 3.8   | 1.4   | .37   | .06  | .03  | .00 |
| 24          | .22   | .04    | .00  | .00 | .00 | .58   | 3.8   | 1.3   | .35   | .06  | .04  | .00 |
| 25          | .16   | .04    | .00  | .00 | .00 | .53   | 3.9   | 1.2   | .35   | .04  | .10  | .00 |
| 26          | .13   | .03    | .00  | .00 | .00 | .58   | 3.8   | 1.0   | .35   | .03  | .50  | .00 |
| 27          | .13   | .02    | .00  | .00 | .02 | .58   | 3.7   | 1.0   | .33   | .03  | .14  | .00 |
| 28          | .13   | .01    | .00  | .00 | .06 | .49   | 3.6   | .99   | .33   | .04  | .08  | .00 |
| 29          | .13   | .00    | .00  | .00 | --- | .45   | 3.5   | 1.0   | .33   | .11  | .07  | .00 |
| 30          | .13   | .00    | .00  | .00 | --- | .49   | 3.3   | .98   | .32   | .13  | .07  | .00 |
| 31          | .13   | ---    | .00  | .00 | --- | .55   | ---   | .84   | ---   | .08  | .03  | --- |
| TOTAL       | 4.28  | 1.79   | .06  | .00 | .08 | 19.19 | 93.63 | 54.81 | 14.94 | 5.44 | 1.52 | .74 |
| MEAN        | .14   | .06    | .00  | .00 | .00 | .62   | 3.12  | 1.77  | .50   | .18  | .05  | .02 |
| MAX         | .35   | .16    | .03  | .00 | .06 | 1.5   | 4.4   | 3.4   | .75   | .31  | .50  | .26 |
| MIN         | .06   | .00    | .00  | .00 | .00 | .06   | .66   | .84   | .32   | .03  | .00  | .00 |
| AC-FT       | 8.5   | 3.6    | .1   | .00 | .2  | 38    | 186   | 109   | 30    | 11   | 3.0  | 1.5 |
| CAL YR 1986 | TOTAL | 311.36 | MEAN | .85 | MAX | 9.8   | MIN   | .00   | AC-FT | 618  |      |     |
| WTR YR 1987 | TOTAL | 196.48 | MEAN | .54 | MAX | 4.4   | MIN   | .00   | AC-FT | 390  |      |     |

06649000 LA PRELE CREEK NEAR DOUGLAS, WY

LOCATION.--Lat 42°40'52", long 105°37'48", in SW1/4 NE1/4 SW1/4 sec.5, T.31 N., R.73 W., Converse County, Hydrologic Unit 10180007, on right bank 0.8 mi upstream from La Prele Creek Reservoir and 13.5 mi southwest of Douglas.

DRAINAGE AREA.--135 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1919 to current year (no winter records since 1971).

REVISED RECORDS.--WSP 1710: Drainage area. WSP 1918: 1920(M), 1952(M).

GAGE.--Water-stage recorder. Elevation of gage is about 5,600 ft above National Geodetic Vertical Datum of 1929, from nearby line of levels.

REMARKS.--Estimated daily discharges: Mar. 1, 3-5, 7-11, 21-23, 29-31. Records fair except those for estimated daily discharges, which are poor. Several small reservoirs upstream from station, combined capacity, about 140 acre-ft, for irrigation. Diversions for irrigation of about 4,600 acres upstream from station. Water is imported from La Bonte Creek and Wagon Hound Creek basins into Little La Prele Creek, upstream from station, for irrigation downstream from La Prele Reservoir.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--52 years (water years 1920-71), 40.4 ft<sup>3</sup>/s, 29,270 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,300 ft<sup>3</sup>/s, June 12, 1970, gage height, 13.01 ft, from rating curve extended above 2,700 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow at times in 1936, 1939-40, 1943.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 171 ft<sup>3</sup>/s, Apr. 19, gage height, 5.96 ft; minimum daily during period of operation, 0.38 ft<sup>3</sup>/s, Sept. 23-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR   | APR  | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-----|-----|-----|-----|-----|-------|------|-------|-------|-------|-------|-------|
| 1     |     |     |     |     |     | 8.0   | 19   | 82    | 4.9   | 5.8   | 3.0   | .78   |
| 2     |     |     |     |     |     | 8.6   | 16   | 79    | 5.3   | 5.5   | 2.7   | .78   |
| 3     |     |     |     |     |     | 9.0   | 18   | 81    | 5.5   | 5.5   | 2.3   | .70   |
| 4     |     |     |     |     |     | 10    | 25   | 59    | 5.1   | 5.3   | 2.1   | .98   |
| 5     |     |     |     |     |     | 14    | 41   | 43    | 4.5   | 4.7   | 2.2   | .88   |
| 6     |     |     |     |     |     | 15    | 51   | 17    | 4.5   | 4.7   | 2.5   | .70   |
| 7     |     |     |     |     |     | 13    | 56   | 8.0   | 9.1   | 4.7   | 3.4   | .70   |
| 8     |     |     |     |     |     | 8.4   | 71   | 2.9   | 23    | 4.4   | 3.8   | .62   |
| 9     |     |     |     |     |     | 6.5   | 88   | 2.3   | 16    | 4.4   | 3.2   | .62   |
| 10    |     |     |     |     |     | 12    | 70   | 2.7   | 18    | 4.4   | 3.2   | .50   |
| 11    |     |     |     |     |     | 14    | 68   | 2.3   | 11    | 4.4   | 2.3   | .56   |
| 12    |     |     |     |     |     | 14    | 82   | 2.2   | 6.0   | 4.2   | 1.7   | .50   |
| 13    |     |     |     |     |     | 14    | 59   | 1.7   | 4.9   | 4.0   | 1.6   | .50   |
| 14    |     |     |     |     |     | 19    | 54   | 2.2   | 6.9   | 3.5   | 1.5   | .44   |
| 15    |     |     |     |     |     | 18    | 73   | 2.7   | 8.7   | 3.4   | 1.4   | .44   |
| 16    |     |     |     |     |     | 17    | 98   | 3.8   | 8.7   | 3.2   | 1.3   | .50   |
| 17    |     |     |     |     |     | 15    | 115  | 5.5   | 8.0   | 3.0   | 1.2   | .62   |
| 18    |     |     |     |     |     | 14    | 142  | 4.2   | 8.0   | 3.4   | .98   | .78   |
| 19    |     |     |     |     |     | 15    | 139  | 4.0   | 8.0   | 3.2   | .98   | .88   |
| 20    |     |     |     |     |     | 18    | 110  | 5.3   | 9.1   | 3.0   | .88   | .56   |
| 21    |     |     |     |     |     | 17    | 104  | 6.3   | 9.1   | 2.9   | .78   | .50   |
| 22    |     |     |     |     |     | 16    | 118  | 6.3   | 9.1   | 2.5   | 1.1   | .50   |
| 23    |     |     |     |     |     | 17    | 116  | 5.1   | 9.9   | 2.3   | 1.3   | .38   |
| 24    |     |     |     |     |     | 18    | 107  | 5.8   | 9.9   | 2.1   | 1.3   | .38   |
| 25    |     |     |     |     |     | 18    | 102  | 7.2   | 9.5   | 1.8   | 1.4   | .38   |
| 26    |     |     |     |     |     | 17    | 109  | 9.1   | 8.3   | 1.7   | 1.7   | .44   |
| 27    |     |     |     |     |     | 19    | 118  | 11    | 6.9   | 1.7   | 1.4   | .50   |
| 28    |     |     |     |     |     | 18    | 110  | 9.1   | 6.0   | 1.6   | .98   | .50   |
| 29    |     |     |     |     |     | 15    | 102  | 6.9   | 6.3   | 1.3   | .78   | .50   |
| 30    |     |     |     |     |     | 14    | 93   | 8.0   | 5.5   | 1.2   | .62   | .50   |
| 31    |     |     |     |     |     | 16    | ---  | 7.6   | ---   | 1.8   | .70   | ---   |
| TOTAL |     |     |     |     |     | 447.5 | 2474 | 493.2 | 255.7 | 105.6 | 54.30 | 17.62 |
| MEAN  |     |     |     |     |     | 14.4  | 82.5 | 15.9  | 8.52  | 3.41  | 1.75  | .59   |
| MAX   |     |     |     |     |     | 19    | 142  | 82    | 23    | 5.8   | 3.8   | .98   |
| MIN   |     |     |     |     |     | 6.5   | 16   | 1.7   | 4.5   | 1.2   | .62   | .38   |
| AC-FT |     |     |     |     |     | 888   | 4910 | 978   | 507   | 209   | 108   | 35    |



## 06652000 NORTH PLATTE RIVER AT ORIN, WY

LOCATION.--Lat 42°39'02", long 105°09'46", in SE1/4 SW1/4 SW1/4 sec.17, T.31 N., R.69 W., Converse County, Hydrologic Unit 10180008, on right bank 630 ft downstream from bridge on U.S. Highway 87, 0.2 mi upstream from Shawnee Creek, and 1.5 mi east of Orin.

DRAINAGE AREA.--14,888 mi<sup>2</sup>, of which 1,193 mi<sup>2</sup> is probably noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January, April to November 1895, April to October 1896, January 1897 to December 1898, April to November 1899, April to September 1917, April to September 1918, May to September 1924, April 1958 to current year. Monthly discharge only for some periods, published in WSP 1310. Published as "at Orin Junction" 1895, 1897-99 and as "at McKinley" 1917-18.

REVISED RECORDS.--WSP 1310: 1896, 1899. WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,656.85 ft above National Geodetic Vertical Datum of 1929. Jan. 1, 1895, to Nov. 30, 1899, and May 1 to Sept. 30, 1924, nonrecording gage at railroad bridge just upstream from U.S. Highway 87 at different datum. Apr. 1, 1917, to Sept. 30, 1918, nonrecording gage at site 2.2 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Dec. 5, Dec. 7 to Feb. 3, and Feb. 24 to Mar. 1. Records good except those for estimated daily discharges, which are poor. Major regulation began after completion of Pathfinder Reservoir in April 1909. Natural flow of stream affected by storage reservoirs, power development, diversions for irrigation, and return flow from irrigated areas.

COOPERATION.--Eleven discharge measurements provided by the Bureau of Reclamation and seven discharge measurements provided by the Wyoming State Engineer's office.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,800 ft<sup>3</sup>/s, May 15, 1965, gage height, 10.00 ft; maximum gage height, 10.45 ft, June 12, 1970; minimum daily discharge determined, 170 ft<sup>3</sup>/s, Sept. 11-14, 1899.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,100 ft<sup>3</sup>/s, Apr. 18, gage height, 4.16 ft; maximum gage height, 8.46 ft, Dec. 27 (backwater from ice); minimum daily discharge, 492 ft<sup>3</sup>/s, May 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL    | AUG     | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|--------|---------|-------|
| 1           | 1270  | 2470   | 1310  | 1100  | 1260  | 1090  | 830   | 1600  | 1400  | 1680   | 2030    | 1690  |
| 2           | 1320  | 2550   | 1280  | 960   | 1310  | 1320  | 788   | 1490  | 1360  | 1670   | 2000    | 1510  |
| 3           | 1680  | 2640   | 1260  | 915   | 1300  | 1530  | 812   | 1420  | 1300  | 1620   | 1960    | 1340  |
| 4           | 2080  | 2670   | 1240  | 965   | 1250  | 1560  | 790   | 1390  | 1290  | 1600   | 1920    | 1220  |
| 5           | 1830  | 2450   | 1200  | 1050  | 1190  | 1390  | 797   | 1200  | 1320  | 1630   | 1910    | 1320  |
| 6           | 1830  | 2300   | 1200  | 1260  | 1110  | 1530  | 876   | 1010  | 1440  | 1610   | 1930    | 1170  |
| 7           | 1790  | 2340   | 1190  | 1000  | 1120  | 1890  | 1980  | 881   | 1550  | 1560   | 2070    | 1090  |
| 8           | 1770  | 2280   | 1190  | 915   | 1180  | 2190  | 2430  | 785   | 1640  | 1470   | 2190    | 1070  |
| 9           | 1790  | 2250   | 1180  | 810   | 1190  | 2670  | 1700  | 718   | 1780  | 1710   | 2280    | 1020  |
| 10          | 1780  | 2230   | 1040  | 720   | 1230  | 2210  | 1550  | 693   | 1840  | 2050   | 2410    | 999   |
| 11          | 1840  | 2270   | 775   | 645   | 1320  | 1770  | 1510  | 656   | 1710  | 2210   | 2380    | 946   |
| 12          | 1850  | 2200   | 900   | 785   | 1450  | 1330  | 1420  | 631   | 1610  | 2270   | 2170    | 922   |
| 13          | 1840  | 2120   | 1100  | 1000  | 1520  | 1180  | 1430  | 597   | 1590  | 2270   | 2100    | 908   |
| 14          | 1820  | 2300   | 1150  | 1190  | 1520  | 1170  | 1310  | 580   | 1580  | 2250   | 2230    | 909   |
| 15          | 1820  | 2290   | 1200  | 1000  | 1520  | 1200  | 1200  | 527   | 1590  | 2150   | 2240    | 896   |
| 16          | 1810  | 2290   | 1200  | 810   | 1510  | 1350  | 1230  | 518   | 1570  | 2150   | 2230    | 909   |
| 17          | 1810  | 2310   | 1220  | 640   | 1350  | 1550  | 1700  | 512   | 1370  | 2100   | 2220    | 876   |
| 18          | 1820  | 2280   | 1160  | 505   | 1320  | 1330  | 2340  | 492   | 1180  | 2210   | 2200    | 899   |
| 19          | 1730  | 2310   | 1090  | 520   | 1270  | 1150  | 2560  | 817   | 1250  | 2230   | 2170    | 904   |
| 20          | 1630  | 2310   | 1070  | 710   | 1260  | 1150  | 2420  | 858   | 1270  | 2160   | 2210    | 902   |
| 21          | 1610  | 2290   | 1130  | 800   | 1250  | 1110  | 1860  | 884   | 1330  | 2100   | 2250    | 895   |
| 22          | 1450  | 2330   | 1100  | 1010  | 1220  | 1030  | 1620  | 1230  | 1520  | 2100   | 2280    | 895   |
| 23          | 1430  | 2340   | 1130  | 1000  | 1200  | 996   | 1590  | 1280  | 1480  | 2100   | 2350    | 892   |
| 24          | 1520  | 2280   | 1190  | 1000  | 1160  | 991   | 1750  | 1300  | 1500  | 2000   | 2330    | 954   |
| 25          | 1410  | 2290   | 1000  | 1100  | 1130  | 969   | 1930  | 1330  | 1510  | 2000   | 2350    | 977   |
| 26          | 1280  | 1990   | 910   | 1130  | 1070  | 952   | 1920  | 1380  | 1530  | 2010   | 2620    | 964   |
| 27          | 1210  | 1420   | 975   | 1170  | 980   | 886   | 1890  | 1380  | 1570  | 1990   | 2550    | 953   |
| 28          | 1200  | 1330   | 1100  | 1200  | 930   | 837   | 2040  | 1390  | 1600  | 2040   | 2290    | 934   |
| 29          | 1190  | 1310   | 1160  | 1230  | ---   | 810   | 1890  | 1430  | 1670  | 2150   | 2140    | 971   |
| 30          | 1180  | 1290   | 1110  | 1180  | ---   | 728   | 1720  | 1510  | 1710  | 2270   | 2010    | 980   |
| 31          | 1660  | ---    | 1140  | 1190  | ---   | 743   | ---   | 1430  | ---   | 2160   | 1870    | ---   |
| TOTAL       | 50250 | 65730  | 34900 | 29510 | 35120 | 40612 | 47883 | 31919 | 45060 | 61520  | 67890   | 30915 |
| MEAN        | 1621  | 2191   | 1126  | 952   | 1254  | 1310  | 1596  | 1030  | 1502  | 1985   | 2190    | 1031  |
| MAX         | 2080  | 2670   | 1310  | 1260  | 1520  | 2670  | 2560  | 1600  | 1840  | 2270   | 2620    | 1690  |
| MIN         | 1180  | 1290   | 775   | 505   | 930   | 728   | 788   | 492   | 1180  | 1470   | 1870    | 876   |
| AC-FT       | 99670 | 130400 | 69220 | 58530 | 69660 | 80550 | 94980 | 63310 | 89380 | 122000 | 134700  | 61320 |
| GAL YR 1986 | TOTAL | 851074 |       | MEAN  | 2332  | MAX   | 8090  | MIN   | 262   | AC-FT  | 1688000 |       |
| WTR YR 1987 | TOTAL | 541309 |       | MEAN  | 1483  | MAX   | 2670  | MIN   | 492   | AC-FT  | 1074000 |       |



## PLATTE RIVER BASIN

06652000 NORTH PLATTE RIVER AT ORIN, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: May to September 1979.

SUSPENDED-SEDIMENT DISCHARGE: May to September 1979.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|-----------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT 27... | 1130 | 1210                                            | 910                                               | 8.6                            | 10.0                                 | 636                                                  | 9.5                                 |
| JAN 02... | 1635 | 919                                             | 805                                               | 8.6                            | 1.0                                  | 639                                                  | 12.8                                |
| MAY 04... | 1145 | 1440                                            | 610                                               | 8.2                            | 14.0                                 | 640                                                  | 8.9                                 |
| 26...     | 1130 | 1380                                            | --                                                | --                             | 18.5                                 | --                                                   | --                                  |
| JUN 23... | 1230 | 1520                                            | --                                                | --                             | 21.5                                 | --                                                   | --                                  |
| JUL 20... | 1030 | 2170                                            | 570                                               | 8.1                            | 20.0                                 | 640                                                  | 7.3                                 |

| DATE      | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|-----------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT 27... | 101                                                            | K15                                                            | 0.8                                                  | 0.03                                                 | 0.87                                                 | 0.9                                                                | 0.04                                        |
| JAN 02... | 108                                                            | K1                                                             | 0.3                                                  | 0.04                                                 | 0.46                                                 | 0.5                                                                | <0.01                                       |
| MAY 04... | 103                                                            | 49                                                             | 0.2                                                  | 0.03                                                 | 0.67                                                 | 0.7                                                                | 0.10                                        |
| 26...     | --                                                             | --                                                             | 0.4                                                  | 0.02                                                 | 0.98                                                 | 1.0                                                                | 0.28                                        |
| JUN 23... | --                                                             | --                                                             | 0.1                                                  | 0.03                                                 | 1.1                                                  | 1.1                                                                | 0.16                                        |
| JUL 20... | 96                                                             | 83                                                             | 0.3                                                  | 0.04                                                 | 1.2                                                  | 1.2                                                                | 0.16                                        |

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

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|-----------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUL 20... | 1030 | 2170                                            | 20.0                                 | <0.01                                                           | --                                                           | --                        | <0.01                      | <0.01                      | <0.01                      |
| AUG 24... | 1000 | 2360                                            | 16.0                                 | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| SEP 29... | 1035 | 977                                             | 13.5                                 | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## 06652700 GLENDO RESERVOIR NEAR GLENDO, WY

LOCATION.--Lat 42°28'21", long 104°57'28", in SW1/4 NE1/4 sec.24, T.29 N., R.68 W., Platte County, Hydrologic Unit 10180008, on right bank in gate shaft house on North Platte River, 0.5 mi southwest of Glendo Dam, and 5.0 mi southeast of Glendo.

DRAINAGE AREA.--15,545 mi<sup>2</sup>, of which 1,215 mi<sup>2</sup> is probably noncontributing.

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

REVISED RECORDS.--WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder for elevations above 4,543.50 ft. Datum of gage is 4,543.50 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by rock-fill dam completed in October 1957. Storage began Oct. 17, 1957. Capacity, 789,400 acre-ft at elevation 4,653.00 ft, spillway crest. Dead storage, 11,030 acre-ft. Figures given herein represent total contents. Water is used for irrigation in North Platte River basin, and for development of power.

COOPERATION.--Records provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 758,800 acre-ft, May 28, 1973, elevation, 4,650.94 ft; minimum daily (since appreciable storage was attained), 15,140 acre-ft, Sept. 28, 1966, elevation, 4,548.10 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 532,000 acre-ft, May 10-16, elevation, 4,636.17 ft, May 13-15; minimum daily, 93,900 acre-ft, Sept. 21, elevation, 4,578.77 ft.

Capacity table (elevation in feet,  
and contents, in acre-feet)

|       |         |       |         |       |         |
|-------|---------|-------|---------|-------|---------|
| 4,570 | 63,100  | 4,600 | 202,000 | 4,630 | 459,000 |
| 4,580 | 98,800  | 4,610 | 274,000 | 4,640 | 583,000 |
| 4,590 | 144,000 | 4,620 | 358,000 |       |         |

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY         | OCT      | NOV      | DEC      | JAN      | FEB      | MAR      | APR      | MAY      | JUN      | JUL      | AUG      | SEP      |
|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1           | 148000   | 194000   | 270000   | 336000   | 394000   | 464000   | 517000   | 518000   | 494000   | 453000   | 262000   | 147000   |
| 2           | 148000   | 198000   | 272000   | 337000   | 392000   | 466000   | 517000   | 521000   | 493000   | 446000   | 256000   | 143000   |
| 3           | 149000   | 202000   | 274000   | 339000   | 399000   | 469000   | 517000   | 523000   | 493000   | 439000   | 250000   | 139000   |
| 4           | 151000   | 206000   | 276000   | 341000   | 402000   | 472000   | 517000   | 521000   | 494000   | 433000   | 246000   | 135000   |
| 5           | 154000   | 210000   | 278000   | 344000   | 405000   | 474000   | 517000   | 527000   | 495000   | 426000   | 244000   | 131000   |
| 6           | 156000   | 213000   | 281000   | 346000   | 407000   | 477000   | 516000   | 529000   | 496000   | 423000   | 240000   | 128000   |
| 7           | 158000   | 217000   | 283000   | 349000   | 410000   | 480000   | 516000   | 530000   | 497000   | 422000   | 238000   | 124000   |
| 8           | 159000   | 221000   | 286000   | 350000   | 412000   | 484000   | 517000   | 531000   | 500000   | 422000   | 236000   | 121000   |
| 9           | 161000   | 225000   | 288000   | 352000   | 414000   | 489000   | 519000   | 531000   | 502000   | 423000   | 234000   | 118000   |
| 10          | 162000   | 228000   | 290000   | 353000   | 417000   | 494000   | 520000   | 532000   | 504000   | 423000   | 232000   | 115000   |
| 11          | 164000   | 231000   | 291000   | 355000   | 419000   | 497000   | 522000   | 532000   | 506000   | 418000   | 230000   | 112000   |
| 12          | 165000   | 234000   | 292000   | 356000   | 422000   | 500000   | 524000   | 532000   | 508000   | 412000   | 229000   | 109000   |
| 13          | 166000   | 235000   | 294000   | 358000   | 425000   | 502000   | 525000   | 532000   | 510000   | 406000   | 224000   | 106000   |
| 14          | 167000   | 237000   | 296000   | 360000   | 428000   | 505000   | 525000   | 532000   | 511000   | 400000   | 220000   | 103000   |
| 15          | 169000   | 240000   | 299000   | 362000   | 431000   | 507000   | 525000   | 532000   | 513000   | 395000   | 215000   | 101000   |
| 16          | 170000   | 243000   | 302000   | 364000   | 434000   | 510000   | 524000   | 532000   | 514000   | 389000   | 210000   | 99600    |
| 17          | 171000   | 246000   | 304000   | 365000   | 437000   | 512000   | 525000   | 531000   | 513000   | 384000   | 204000   | 98200    |
| 18          | 172000   | 248000   | 306000   | 365000   | 439000   | 513000   | 524000   | 529000   | 513000   | 378000   | 199000   | 96900    |
| 19          | 174000   | 250000   | 308000   | 366000   | 442000   | 514000   | 525000   | 525000   | 513000   | 372000   | 192000   | 95700    |
| 20          | 175000   | 253000   | 310000   | 367000   | 444000   | 515000   | 526000   | 522000   | 511000   | 366000   | 189000   | 94600    |
| 21          | 176000   | 255000   | 312000   | 369000   | 447000   | 516000   | 526000   | 518000   | 509000   | 358000   | 184000   | 93900    |
| 22          | 177000   | 258000   | 314000   | 370000   | 449000   | 517000   | 526000   | 515000   | 507000   | 354000   | 180000   | 94300    |
| 23          | 178000   | 260000   | 316000   | 372000   | 451000   | 517000   | 524000   | 512000   | 502000   | 349000   | 175000   | 96300    |
| 24          | 180000   | 262000   | 319000   | 374000   | 454000   | 518000   | 522000   | 509000   | 498000   | 341000   | 171000   | 96900    |
| 25          | 182000   | 265000   | 321000   | 377000   | 456000   | 518000   | 520000   | 507000   | 494000   | 331000   | 168000   | 98900    |
| 26          | 184000   | 267000   | 323000   | 379000   | 458000   | 518000   | 518000   | 505000   | 486000   | 319000   | 165000   | 101000   |
| 27          | 185000   | 268000   | 325000   | 381000   | 460000   | 518000   | 516000   | 502000   | 479000   | 308000   | 162000   | 103000   |
| 28          | 187000   | 268000   | 327000   | 384000   | 462000   | 518000   | 516000   | 500000   | 473000   | 297000   | 159000   | 105000   |
| 29          | 188000   | 268000   | 329000   | 387000   | ---      | 518000   | 516000   | 498000   | 466000   | 286000   | 157000   | 106000   |
| 30          | 190000   | 269000   | 331000   | 389000   | ---      | 518000   | 517000   | 496000   | 460000   | 276000   | 153000   | 108000   |
| 31          | 191000   | ---      | 333000   | 392000   | ---      | 518000   | ---      | 494000   | ---      | 268000   | 150000   | ---      |
| MAX         | 191000   | 269000   | 333000   | 392000   | 462000   | 518000   | 526000   | 532000   | 514000   | 453000   | 262000   | 147000   |
| MIN         | 148000   | 194000   | 270000   | 336000   | 392000   | 464000   | 516000   | 494000   | 460000   | 268000   | 150000   | 93900    |
| (+)         | 4,598.22 | 4,609.40 | 4,617.22 | 4,623.50 | 4,630.25 | 4,635.02 | 4,634.95 | 4,633.10 | 4,630.05 | 4,609.32 | 4,591.10 | 4,582.30 |
| (+)         | +43,000  | +78,000  | +64,000  | +59,000  | +70,000  | +56,000  | -1,000   | -23,000  | -34,000  | -192,000 | -118,000 | -42,000  |
| CAL YR 1986 | MAX      | 585000   | MIN      | 145000   | (+)      | +8,000   |          |          |          |          |          |          |
| WTR YR 1987 | MAX      | 532000   | MIN      | 93900    | (+)      | -40,000  |          |          |          |          |          |          |

(+) Elevation, in feet, at end of month.

(+) Change in contents, in acre-feet.

## PLATTE RIVER BASIN

06652800 NORTH PLATTE RIVER BELOW GLENDO RESERVOIR, WY

LOCATION.--Lat 42°27'25", long 104°56'50", in SW1/4 SW1/4 NW1/4 sec.30, T.29 N., R.67 W., Platte County, Hydrologic Unit 10180008, on right bank opposite Sand Draw, 1.3 mi upstream from Horseshoe Creek, 3.1 mi downstream from Glendo Dam, and 5.2 mi southeast of Glendo.

DRAINAGE AREA.--15,548 mi<sup>2</sup>, of which 1,215 mi<sup>2</sup> is probably noncontributing.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,488.94 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Estimated daily discharges: Dec. 10, Jan. 9-11, 15-17, 20, 22. Records excellent except those less than 30 ft<sup>3</sup>/s, which are poor. Flow completely regulated by Glendo Reservoir since Oct. 17, 1957. (See sta 06652700.) Natural flow of stream affected by transbasin diversions, storage reservoirs, power development, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

COOPERATION.--Fifteen discharge measurements provided by the Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,300 ft<sup>3</sup>/s, June 29, 1984, gage height, 11.16 ft; minimum daily, 0.41 ft<sup>3</sup>/s, Oct. 17, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,590 ft<sup>3</sup>/s, July 25, gage height, 10.02 ft; minimum daily, 8.2 ft<sup>3</sup>/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV      | DEC    | JAN   | FEB  | MAR   | APR   | MAY   | JUN    | JUL    | AUG     | SEP     |
|-------------|-------|----------|--------|-------|------|-------|-------|-------|--------|--------|---------|---------|
| 1           | 1400  | 554      | 686    | 10    | 10   | 11    | 864   | 601   | 1590   | 4870   | 5080    | 3350    |
| 2           | 1470  | 598      | 296    | 10    | 10   | 11    | 901   | 377   | 1090   | 4950   | 5070    | 3310    |
| 3           | 1160  | 642      | 188    | 10    | 10   | 11    | 877   | 219   | 862    | 4980   | 5070    | 3300    |
| 4           | 813   | 720      | 13     | 10    | 10   | 11    | 858   | 167   | 722    | 4960   | 3900    | 3240    |
| 5           | 722   | 520      | 12     | 10    | 10   | 11    | 851   | 165   | 642    | 4930   | 3320    | 3140    |
| 6           | 899   | 529      | 12     | 10    | 10   | 11    | 1040  | 345   | 620    | 1760   | 3280    | 2930    |
| 7           | 945   | 421      | 12     | 11    | 10   | 11    | 1260  | 489   | 626    | 1340   | 3390    | 2770    |
| 8           | 953   | 218      | 11     | 10    | 10   | 12    | 1240  | 483   | 640    | 1330   | 3320    | 2660    |
| 9           | 1080  | 221      | 11     | 9.6   | 10   | 11    | 986   | 481   | 618    | 1310   | 3350    | 2500    |
| 10          | 1210  | 412      | 10     | 9.8   | 10   | 11    | 602   | 484   | 565    | 2960   | 3420    | 2590    |
| 11          | 1270  | 518      | 12     | 10    | 10   | 21    | 522   | 486   | 639    | 5150   | 3470    | 2520    |
| 12          | 1210  | 919      | 12     | 10    | 10   | 38    | 557   | 492   | 695    | 5080   | 3720    | 2280    |
| 13          | 1120  | 1100     | 12     | 10    | 10   | 32    | 1190  | 496   | 695    | 5090   | 4080    | 2260    |
| 14          | 1090  | 996      | 12     | 10    | 11   | 32    | 1480  | 503   | 784    | 4790   | 4480    | 2250    |
| 15          | 1160  | 942      | 12     | 9.7   | 11   | 32    | 1480  | 579   | 858    | 4710   | 4950    | 2020    |
| 16          | 1170  | 984      | 12     | 9.5   | 11   | 296   | 1460  | 698   | 1150   | 4740   | 5080    | 1650    |
| 17          | 1180  | 1060     | 12     | 10    | 11   | 642   | 1450  | 1250  | 1350   | 5010   | 5020    | 1580    |
| 18          | 1170  | 1080     | 11     | 11    | 11   | 822   | 1450  | 2620  | 1390   | 5050   | 4820    | 1570    |
| 19          | 1170  | 1090     | 11     | 11    | 11   | 789   | 1590  | 2620  | 1580   | 4960   | 4640    | 1530    |
| 20          | 1180  | 1000     | 11     | 9.7   | 11   | 796   | 1850  | 2620  | 2030   | 4970   | 4590    | 1480    |
| 21          | 1120  | 1100     | 11     | 10    | 11   | 790   | 2190  | 2640  | 2620   | 5000   | 4530    | 1150    |
| 22          | 1020  | 1110     | 11     | 9.8   | 11   | 810   | 2490  | 2700  | 3110   | 4990   | 4500    | 561     |
| 23          | 714   | 1120     | 11     | 10    | 11   | 786   | 2490  | 2830  | 3920   | 5020   | 4430    | 244     |
| 24          | 540   | 1120     | 11     | 9.9   | 11   | 817   | 2630  | 2630  | 4170   | 6230   | 4290    | 152     |
| 25          | 540   | 1120     | 11     | 10    | 11   | 827   | 2710  | 2470  | 4380   | 7550   | 4090    | 8.3     |
| 26          | 539   | 1130     | 11     | 10    | 10   | 824   | 2690  | 2460  | 4630   | 7580   | 3750    | 8.6     |
| 27          | 536   | 1120     | 11     | 10    | 11   | 847   | 2500  | 2470  | 4740   | 7550   | 3660    | 8.7     |
| 28          | 532   | 1120     | 10     | 10    | 11   | 868   | 1640  | 2470  | 4790   | 7520   | 3640    | 8.6     |
| 29          | 522   | 1130     | 10     | 10    | ---  | 901   | 1220  | 2470  | 4890   | 7420   | 3590    | 8.5     |
| 30          | 522   | 1130     | 10     | 9.9   | ---  | 891   | 854   | 2440  | 4880   | 7370   | 3570    | 8.2     |
| 31          | 528   | ---      | 9.9    | 9.6   | ---  | 897   | ---   | 1930  | ---    | 5180   | 3490    | ---     |
| TOTAL       | 29485 | 25724    | 1484.9 | 310.5 | 294  | 12869 | 43922 | 43685 | 61276  | 154350 | 127590  | 51087.9 |
| MEAN        | 951   | 857      | 47.9   | 10.0  | 10.5 | 415   | 1464  | 1409  | 2043   | 4979   | 4116    | 1703    |
| MAX         | 1470  | 1130     | 686    | 11    | 11   | 901   | 2710  | 2830  | 4890   | 7580   | 5080    | 3350    |
| MIN         | 522   | 218      | 9.9    | 9.5   | 10   | 11    | 522   | 165   | 565    | 1310   | 3280    | 8.2     |
| AC-FT       | 58480 | 51020    | 2950   | 616   | 583  | 25530 | 87120 | 86650 | 121500 | 306200 | 253100  | 101300  |
| CAL YR 1986 | TOTAL | 829111.7 |        | MEAN  | 2272 | MAX   | 8490  | MIN   | 8.9    | AC-FT  | 1645000 |         |
| WTR YR 1987 | TOTAL | 552078.3 |        | MEAN  | 1513 | MAX   | 7580  | MIN   | 8.2    | AC-FT  | 1095000 |         |

## PLATTE RIVER BASIN

06652800 NORTH PLATTE RIVER BELOW GLENDON RESERVOIR, WY--Continued

## WATER-QUALITY RECORDS

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

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUL<br>20... | 1745 | 4980                                            | 19.0                                 | <0.01                                                           | --                                                           | --                        | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>24... | 1200 | 4410                                            | 20.0                                 | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>29... | 1300 | 8.2                                             | 13.5                                 | <0.01                                                           | 0.01                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |

## PLATTE RIVER BASIN

06655500 GUERNSEY RESERVOIR NEAR GUERNSEY, WY

LOCATION.--Lat 42°17'23", long 104°45'48", in NE1/4 NW1/4 sec.27, T.27 N., R.66 W., Platte County, Hydrologic Unit 10180008, on gate structure at right end of dam on North Platte River and 1.2 mi northwest of Guernsey.

DRAINAGE AREA.--16,224 mi<sup>2</sup>, of which 1,216 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--January 1928 to current year. Prior to October 1950 monthend figures only, published in WSP 1310.

REVISED RECORDS.--WDR WY-76-1: Drainage area. WDR WY-82-1: 1981 (capacity).

GAGE.--Water-stage recorder. Datum of gage is 4,370.00 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation); gage readings have been reduced to elevations of National Geodetic Vertical Datum of 1929. Prior to Sept. 20, 1966, nonrecording gages at same datum.

REMARKS.--Reservoir is formed by rock-fill dam completed in July 1927. Capacity, 45,600 acre-ft, at elevation 4,420 ft, top of spillway gate. Dead storage is negligible. Figures given herein represent total contents. Usable contents published prior to October 1956. Water is used for irrigation in eastern Wyoming and western Nebraska and for development of power.

COOPERATION.--Records provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 73,240 acre-ft, Oct. 17, 1929, elevation, 4,420.95 ft, no storage Oct. 11, 1982, Oct. 6, 7, Oct. 10 to Dec. 4, 1983, Oct. 19, Oct. 25, 1984 to Jan. 14, 1985, Dec. 6-7, 1986; minimum daily elevation, 4,361.50 ft, Oct. 5, 6, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 44,900 acre-ft, Apr. 10, elevation, 4,419.71 ft; no storage Dec. 6-7.

Capacity table (elevation in feet,  
and contents, in acre-feet)

|       |       |       |        |       |        |
|-------|-------|-------|--------|-------|--------|
| 4,370 | 0     | 4,390 | 2,710  | 4,410 | 24,300 |
| 4,375 | 50    | 4,395 | 5,360  | 4,415 | 34,300 |
| 4,380 | 375   | 4,400 | 9,690  | 4,420 | 45,600 |
| 4,385 | 1,200 | 4,405 | 16,000 |       |        |

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT      | NOV      | DEC      | JAN      | FEB      | MAR      | APR      | MAY      | JUN      | JUL      | AUG      | SEP      |
|-----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1   | 32000    | 19100    | 6130     | 3        | 2460     | 4690     | 32200    | 43000    | 41000    | 38000    | 34400    | 37100    |
| 2   | 31800    | 18200    | 4510     | 29       | 2370     | 4760     | 33900    | 43300    | 41300    | 37700    | 34300    | 36900    |
| 3   | 31400    | 17200    | 2900     | 23       | 2620     | 4840     | 35600    | 43300    | 41200    | 37500    | 34100    | 36800    |
| 4   | 31000    | 16500    | 954      | 12       | 2700     | 4910     | 37300    | 43200    | 41000    | 37200    | 34800    | 36800    |
| 5   | 30200    | 15500    | 150      | 22       | 2770     | 5000     | 38800    | 43100    | 40800    | 36900    | 35100    | 36800    |
| 6   | 29700    | 14300    | 0        | 87       | 2850     | 5070     | 40200    | 43100    | 40500    | 32200    | 35100    | 36700    |
| 7   | 29400    | 13200    | 0        | 190      | 2930     | 5150     | 42100    | 43800    | 40300    | 24700    | 35500    | 36300    |
| 8   | 29100    | 11600    | 4        | 325      | 3000     | 5250     | 43200    | 44000    | 40200    | 17000    | 35500    | 36100    |
| 9   | 28900    | 9910     | 4        | 411      | 3100     | 5300     | 44500    | 44000    | 40100    | 9440     | 35500    | 35800    |
| 10  | 29000    | 8140     | 4        | 544      | 3180     | 5380     | 44900    | 44000    | 39900    | 2210     | 35500    | 35300    |
| 11  | 29200    | 6950     | 4        | 677      | 3260     | 5390     | 44700    | 43900    | 39700    | 2170     | 35600    | 34800    |
| 12  | 29300    | 5970     | 4        | 804      | 3340     | 5440     | 44600    | 44000    | 39600    | 2420     | 35300    | 33700    |
| 13  | 29300    | 6080     | 4        | 921      | 3420     | 5560     | 44300    | 43700    | 39600    | 2660     | 35500    | 32600    |
| 14  | 29200    | 6140     | 4        | 1020     | 3510     | 5700     | 44500    | 42700    | 39400    | 2610     | 35600    | 31500    |
| 15  | 29700    | 5890     | 4        | 1080     | 3600     | 5840     | 44500    | 41200    | 39400    | 2290     | 35700    | 30200    |
| 16  | 29700    | 5650     | 4        | 1140     | 3690     | 6010     | 44400    | 37800    | 39000    | 1810     | 35900    | 28200    |
| 17  | 29700    | 5620     | 4        | 1230     | 3770     | 7130     | 44100    | 34300    | 38800    | 1620     | 36300    | 25800    |
| 18  | 29700    | 5620     | 4        | 1310     | 3840     | 8780     | 43800    | 34200    | 38700    | 1860     | 36700    | 23500    |
| 19  | 29400    | 5700     | 4        | 1390     | 3920     | 10400    | 43500    | 34300    | 38500    | 1690     | 36900    | 21100    |
| 20  | 29900    | 5660     | 3        | 1460     | 3990     | 12200    | 43300    | 34500    | 38700    | 1500     | 37000    | 18800    |
| 21  | 29900    | 4960     | 3        | 1530     | 4070     | 13700    | 43100    | 34400    | 38600    | 1370     | 37200    | 16300    |
| 22  | 29800    | 5670     | 3        | 1600     | 4130     | 15400    | 43100    | 34700    | 38400    | 1320     | 36800    | 14600    |
| 23  | 29400    | 5740     | 3        | 1680     | 4210     | 17000    | 43100    | 35200    | 37900    | 1230     | 37700    | 12100    |
| 24  | 28300    | 5830     | 3        | 1760     | 4280     | 18600    | 43100    | 36000    | 37800    | 2340     | 38200    | 9970     |
| 25  | 27100    | 5880     | 3        | 1850     | 4360     | 20300    | 43200    | 36600    | 37700    | 8390     | 38700    | 7660     |
| 26  | 26000    | 5960     | 3        | 1930     | 4430     | 21900    | 43400    | 37400    | 36700    | 13600    | 38600    | 5270     |
| 27  | 25000    | 6020     | 3        | 2020     | 4520     | 23500    | 43800    | 38200    | 37700    | 18900    | 38300    | 3040     |
| 28  | 23800    | 6060     | 3        | 2120     | 4600     | 25200    | 43300    | 38900    | 37900    | 24000    | 37900    | 1460     |
| 29  | 22700    | 6120     | 3        | 2200     | ---      | 27000    | 42900    | 39500    | 38000    | 28800    | 37500    | 622      |
| 30  | 21400    | 6240     | 3        | 2280     | ---      | 28700    | 42900    | 40200    | 38100    | 33600    | 37300    | 526      |
| 31  | 20300    | ---      | 3        | 2370     | ---      | 30500    | ---      | 40700    | ---      | 34600    | 37200    | ---      |
| MAX | 32000    | 19100    | 6130     | 2370     | 4600     | 30500    | 44900    | 44000    | 41300    | 38000    | 38700    | 37100    |
| MIN | 20300    | 4960     | 0        | 3        | 2370     | 4690     | 32200    | 34200    | 36700    | 1230     | 34100    | 526      |
| (+) | 4,407.71 | 4,396.21 | 4,371.24 | 4,389.06 | 4,393.81 | 4,413.15 | 4,418.85 | 4,417.90 | 4,416.72 | 4,415.15 | 4,416.31 | 4,381.22 |
| (+) | -12,600  | -14,060  | -6,237   | +2,367   | +2,230   | +25,900  | +12,400  | -2,200   | -2,600   | -3,500   | +2,600   | -36,674  |

CAL YR 1986 MAX 47100 MIN 0 (+) -6,107  
WTR YR 1987 MAX 44900 MIN 0 (+) -32,374

(+) Elevation, in feet, at end of month.  
(+) Change in contents, in acre-feet.



## 06656000 NORTH PLATTE RIVER BELOW GUERNSEY RESERVOIR, WY

LOCATION.--Lat 42°16'50", long 104°45'15", in SE1/4 SE1/4 sec.27, T.27 N., R.66 W., Platte County, Hydrologic Unit 10180008, on right bank 1.0 mi northwest of Guernsey and 1.1 mi downstream from Guernsey Dam.

DRAINAGE AREA.--16,237 mi<sup>2</sup>, of which 1,216 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--June 1900 to current year (no winter records prior to 1903). Monthly discharge only for some periods, published in WSP 1310. Published as "near Guernsey" 1900-1901, 1904; as "at Guernsey" 1902-3, 1905-8, March to October 1912; as "at Whalen" 1909; as North Platte River and Interstate Canal at Whalen 1910-11, 1913-16; and as "above Whalen" 1917-27.

REVISED RECORDS.--WSP 1310: 1903-4, 1924. WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,340 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 17, 1908, and Mar. 30 to Oct. 31, 1912, nonrecording gages downstream at several sites within 0.8 mi at different datums. May 1, 1909, to Dec. 31, 1927, nonrecording gages at different datums on river and diversion canals at Whalen Dam about 9.0 mi downstream. Jan. 1, 1928, to Sept. 30, 1964, water-stage recorder at present site and datum 1.50 ft higher.

REMARKS.--Estimated daily discharges: Mar. 24, 25, 29, 30. Records excellent above 500 ft<sup>3</sup>/s and fair below. Flow completely regulated by Guernsey Reservoir since 1927. (See sta 06655500.) Small diversions for irrigation between this station and diversion dam at Whalen. Natural flow of stream affected by transbasin diversions, storage reservoirs, power development, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

COOPERATION.--Nineteen discharge measurements provided by the Bureau of Reclamation and six discharge measurements provided by the Wyoming State Engineer's Office.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft<sup>3</sup>/s, June 2 or 3, 1908, gage height, 11.5 ft from floodmark, site and datum then in use, from rating curve extended above 13,000 ft<sup>3</sup>/s; no flow Feb. 28, 1927, Nov. 19 to Dec. 8, Dec. 10-12, 14, 15, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,280 ft<sup>3</sup>/s, July 24, gage height, 6.15 ft; minimum daily, 2.7 ft<sup>3</sup>/s, Mar. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV      | DEC   | JAN   | FEB   | MAR   | APR     | MAY   | JUN    | JUL    | AUG     | SEP    |
|-------------|-------|----------|-------|-------|-------|-------|---------|-------|--------|--------|---------|--------|
| 1           | 1690  | 1160     | 1160  | 56    | 5.3   | 6.9   | 4.0     | 638   | 1510   | 4960   | 5170    | 3530   |
| 2           | 1730  | 1130     | 1160  | 80    | 6.3   | 6.5   | 4.1     | 405   | 1110   | 5110   | 5160    | 3550   |
| 3           | 1540  | 1150     | 1150  | 69    | 6.3   | 6.3   | 4.9     | 283   | 951    | 5220   | 5180    | 3530   |
| 4           | 1160  | 1130     | 1110  | 81    | 6.3   | 6.3   | 5.9     | 230   | 862    | 5210   | 3930    | 3430   |
| 5           | 1070  | 1140     | 495   | 70    | 6.3   | 6.3   | 6.6     | 201   | 807    | 5170   | 3270    | 3340   |
| 6           | 1090  | 1170     | 110   | 57    | 6.3   | 5.7   | 197     | 198   | 803    | 5140   | 3230    | 3190   |
| 7           | 1090  | 1150     | 96    | 8.6   | 6.3   | 4.2   | 431     | 196   | 810    | 5180   | 3320    | 3060   |
| 8           | 1090  | 1140     | 85    | 5.2   | 6.3   | 5.6   | 450     | 383   | 842    | 5160   | 3240    | 2930   |
| 9           | 1090  | 1120     | 68    | 4.3   | 6.3   | 26    | 444     | 505   | 754    | 5120   | 3260    | 2800   |
| 10          | 1090  | 1090     | 67    | 3.7   | 6.3   | 8.4   | 525     | 506   | 699    | 5080   | 3350    | 2890   |
| 11          | 1100  | 1100     | 90    | 3.5   | 6.3   | 65    | 590     | 502   | 711    | 5180   | 3380    | 2970   |
| 12          | 1100  | 1100     | 85    | 3.4   | 6.3   | 6.7   | 583     | 486   | 719    | 5210   | 3560    | 2900   |
| 13          | 1100  | 1100     | 85    | 3.3   | 6.3   | 5.8   | 1070    | 679   | 714    | 5140   | 3780    | 2850   |
| 14          | 1100  | 1100     | 80    | 3.2   | 6.3   | 5.0   | 1360    | 997   | 792    | 5010   | 4200    | 2880   |
| 15          | 1100  | 1130     | 79    | 4.8   | 6.3   | 4.8   | 1470    | 1290  | 884    | 4930   | 4650    | 2840   |
| 16          | 1110  | 1130     | 80    | 6.9   | 6.3   | 5.8   | 1540    | 2480  | 1190   | 4990   | 4800    | 2760   |
| 17          | 1110  | 1130     | 77    | 6.3   | 6.3   | 4.8   | 1610    | 2600  | 1380   | 5060   | 4790    | 2760   |
| 18          | 1110  | 1120     | 72    | 6.0   | 6.3   | 5.5   | 1630    | 2510  | 1400   | 5120   | 4630    | 2730   |
| 19          | 1110  | 1120     | 78    | 5.4   | 6.3   | 5.8   | 1690    | 2600  | 1520   | 5110   | 4580    | 2690   |
| 20          | 1120  | 1130     | 78    | 5.7   | 6.3   | 4.9   | 1890    | 2680  | 1830   | 5090   | 4530    | 2660   |
| 21          | 1110  | 1130     | 79    | 4.9   | 6.3   | 6.5   | 2230    | 2650  | 2570   | 5130   | 4470    | 2300   |
| 22          | 1110  | 1130     | 73    | 4.9   | 6.3   | 6.7   | 2540    | 2600  | 3110   | 5140   | 4430    | 1910   |
| 23          | 1110  | 1140     | 77    | 4.8   | 6.3   | 4.7   | 2530    | 2620  | 3910   | 5090   | 4300    | 1610   |
| 24          | 1110  | 1140     | 80    | 4.7   | 6.6   | 3.3   | 2650    | 2350  | 4170   | 5140   | 4160    | 1340   |
| 25          | 1110  | 1140     | 72    | 4.7   | 6.4   | 4.3   | 2680    | 2230  | 4300   | 5090   | 4010    | 1270   |
| 26          | 1110  | 1140     | 74    | 4.7   | 6.3   | 4.7   | 2670    | 2150  | 4600   | 5110   | 3880    | 1240   |
| 27          | 1110  | 1150     | 84    | 5.2   | 6.3   | 2.7   | 2490    | 2090  | 4690   | 5090   | 3870    | 1180   |
| 28          | 1110  | 1160     | 82    | 4.7   | 6.9   | 4.2   | 2190    | 2140  | 4750   | 5090   | 3890    | 845    |
| 29          | 1130  | 1160     | 72    | 4.7   | ---   | 4.3   | 1560    | 2140  | 4880   | 5130   | 3870    | 502    |
| 30          | 1160  | 1160     | 83    | 4.7   | ---   | 4.2   | 959     | 2150  | 4880   | 5120   | 3800    | 81     |
| 31          | 1160  | ---      | 70    | 4.7   | ---   | 4.2   | ---     | 1800  | ---    | 5150   | 3700    | ---    |
| TOTAL       | 36030 | 33990    | 7151  | 536.0 | 176.4 | 246.1 | 38004.5 | 45289 | 62148  | 158470 | 126390  | 72568  |
| MEAN        | 1162  | 1133     | 231   | 17.3  | 6.30  | 7.94  | 1267    | 1461  | 2072   | 5112   | 4077    | 2419   |
| MAX         | 1730  | 1170     | 1160  | 81    | 6.9   | 65    | 2680    | 2680  | 4880   | 5220   | 5180    | 3550   |
| MIN         | 1070  | 1090     | 67    | 3.2   | 5.3   | 2.7   | 4.0     | 196   | 699    | 4930   | 3230    | 81     |
| AC-FT       | 71470 | 67420    | 14180 | 1060  | 350   | 488   | 75380   | 89830 | 123300 | 314300 | 250700  | 143900 |
| CAL YR 1986 | TOTAL | 881431.9 |       | MEAN  | 2415  | MAX   | 8560    | MIN   | 1.4    | AC-FT  | 1748000 |        |
| WTR YR 1987 | TOTAL | 580999.0 |       | MEAN  | 1592  | MAX   | 5220    | MIN   | 2.7    | AC-FT  | 1152000 |        |



## 06657000 NORTH PLATTE RIVER BELOW WHALEN DIVERSION DAM, WY

LOCATION.--Lat 42°14'20", long 104°36'29", in NE1/4 SW1/4 sec.12, T.26 N., R.65 W., Goshen County, Hydrologic Unit 10180009, on left bank 0.2 mi downstream from Cottonwood Draw, 2.5 mi downstream from Whalen diversion dam, and 4.8 mi northwest of Fort Laramie.

DRAINAGE AREA.--16,425 mi<sup>2</sup>, of which 1,219 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--May 1909 to current year. Prior to Apr. 16, 1938, published as "below Whalen", and Apr. 16, 1938, to Sept. 30, 1974, as "at recorder station, below Whalen".

REVISED RECORDS.--WSP 1310: 1924. WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,250 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Apr. 16, 1938, nonrecording gages at Whalen diversion dam and canals 2.5 mi upstream at different datums. Apr. 16, 1938, to Nov. 17, 1955, water-stage recorder at site 200 ft downstream, and Nov. 18, 1955, to Feb. 16, 1972, at present site at datum 1.00 ft higher.

REMARKS.--Estimated daily discharges: Dec. 9-11, Jan. 5-8, 15-26, and Mar. 31. Records good except those for December and January, which are poor. Flow regulated by Whalen diversion dam 2.5 mi upstream. Natural flow of stream affected by storage reservoirs, transbasin diversions, power development, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

COOPERATION.--Thirteen discharge measurements provided by the Bureau of Reclamation and three discharge measurements the provided by Wyoming State Engineer's Office.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge determined, 22,000 ft<sup>3</sup>/s, June 26, 1955, gage height, 9.85 ft, from rating curve extended above 4,500 ft<sup>3</sup>/s on basis of studies of peak flow measurements of upstream floods; no flow at times in 1910, 1916, 1925-27, 1962-64, 1967, 1970-71, 1975-77, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,610 ft<sup>3</sup>/s, Aug. 4, gage height, 4.98 ft; minimum daily, 4.5 ft<sup>3</sup>/s, Apr. 1, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV      | DEC   | JAN   | FEB   | MAR   | APR     | MAY   | JUN   | JUL   | AUG    | SEP   |
|-------------|-------|----------|-------|-------|-------|-------|---------|-------|-------|-------|--------|-------|
| 1           | 869   | 1140     | 1140  | 51    | 8.4   | 6.2   | 4.5     | 232   | 216   | 1420  | 1470   | 536   |
| 2           | 936   | 1120     | 1130  | 65    | 8.0   | 5.9   | 4.7     | 629   | 270   | 1500  | 1470   | 601   |
| 3           | 937   | 1140     | 1120  | 58    | 8.0   | 5.6   | 4.7     | 387   | 248   | 1530  | 1490   | 594   |
| 4           | 988   | 1120     | 1100  | 75    | 8.0   | 5.9   | 4.5     | 282   | 170   | 1510  | 1390   | 557   |
| 5           | 1060  | 1120     | 754   | 79    | 7.2   | 5.6   | 4.7     | 257   | 115   | 1490  | 629    | 558   |
| 6           | 1060  | 1160     | 216   | 68    | 7.2   | 5.6   | 21      | 227   | 94    | 1460  | 437    | 501   |
| 7           | 1070  | 1150     | 170   | 53    | 7.2   | 5.6   | 346     | 223   | 99    | 1450  | 422    | 473   |
| 8           | 1200  | 1130     | 146   | 18    | 6.8   | 5.6   | 415     | 294   | 191   | 1460  | 311    | 447   |
| 9           | 1110  | 1130     | 110   | 17    | 6.8   | 6.8   | 277     | 500   | 109   | 1420  | 212    | 336   |
| 10          | 1100  | 1080     | 85    | 17    | 6.8   | 13    | 374     | 515   | 83    | 1320  | 166    | 386   |
| 11          | 1100  | 1120     | 110   | 17    | 6.8   | 11    | 540     | 514   | 69    | 1410  | 160    | 555   |
| 12          | 1100  | 1120     | 112   | 16    | 6.5   | 35    | 557     | 514   | 69    | 1450  | 284    | 624   |
| 13          | 1100  | 1160     | 107   | 15    | 6.5   | 12    | 713     | 507   | 70    | 1410  | 489    | 609   |
| 14          | 1080  | 1110     | 99    | 13    | 6.5   | 9.3   | 784     | 837   | 67    | 1320  | 813    | 614   |
| 15          | 1060  | 1140     | 92    | 9.6   | 7.2   | 8.0   | 596     | 675   | 94    | 1260  | 1280   | 594   |
| 16          | 1060  | 1130     | 90    | 8.7   | 6.8   | 8.0   | 529     | 847   | 272   | 1280  | 1440   | 633   |
| 17          | 1100  | 1110     | 83    | 9.7   | 6.8   | 8.4   | 585     | 947   | 514   | 1360  | 1410   | 649   |
| 18          | 1080  | 1120     | 77    | 11    | 6.5   | 7.9   | 633     | 958   | 521   | 1450  | 1260   | 649   |
| 19          | 1100  | 1130     | 79    | 9.7   | 6.5   | 7.2   | 688     | 909   | 593   | 1420  | 1190   | 628   |
| 20          | 1100  | 1140     | 79    | 8.6   | 6.5   | 7.2   | 820     | 813   | 829   | 1410  | 1150   | 665   |
| 21          | 1080  | 1140     | 77    | 7.8   | 6.5   | 8.0   | 1100    | 786   | 1080  | 1410  | 1080   | 706   |
| 22          | 1080  | 1130     | 69    | 7.7   | 6.5   | 7.6   | 1510    | 690   | 1270  | 1410  | 1070   | 757   |
| 23          | 1070  | 1130     | 69    | 8.0   | 6.0   | 7.2   | 1530    | 706   | 1410  | 1400  | 1020   | 540   |
| 24          | 1070  | 1130     | 67    | 8.6   | 6.2   | 6.2   | 1650    | 534   | 1530  | 1430  | 909    | 236   |
| 25          | 1070  | 1130     | 63    | 9.1   | 6.7   | 5.6   | 1740    | 366   | 1510  | 1410  | 777    | 147   |
| 26          | 1070  | 1130     | 65    | 9.3   | 6.8   | 6.2   | 1760    | 336   | 1500  | 1400  | 647    | 91    |
| 27          | 1080  | 1130     | 69    | 9.3   | 6.8   | 5.3   | 1650    | 212   | 1450  | 1370  | 641    | 90    |
| 28          | 1070  | 1130     | 72    | 9.3   | 6.5   | 5.3   | 1270    | 173   | 1410  | 1380  | 681    | 98    |
| 29          | 1100  | 1140     | 61    | 9.4   | ---   | 5.0   | 819     | 187   | 1540  | 1410  | 698    | 136   |
| 30          | 1130  | 1140     | 70    | 8.4   | ---   | 4.7   | 347     | 191   | 1490  | 1410  | 681    | 341   |
| 31          | 1130  | ---      | 61    | 8.4   | ---   | 4.6   | ---     | 176   | ---   | 1450  | 636    | ---   |
| TOTAL       | 33160 | 33900    | 7642  | 714.6 | 193.0 | 245.5 | 21277.1 | 15424 | 18883 | 43810 | 26313  | 14351 |
| MEAN        | 1070  | 1130     | 247   | 23.1  | 6.89  | 7.92  | 709     | 498   | 629   | 1413  | 849    | 478   |
| MAX         | 1200  | 1160     | 1140  | 79    | 8.4   | 35    | 1760    | 958   | 1540  | 1530  | 1490   | 757   |
| MIN         | 869   | 1080     | 61    | 7.7   | 6.0   | 4.6   | 4.5     | 173   | 67    | 1260  | 160    | 90    |
| AC-FT       | 65770 | 67240    | 15160 | 1420  | 383   | 487   | 42200   | 30590 | 37450 | 86900 | 52190  | 28470 |
| CAL YR 1986 | TOTAL | 466294.5 |       | MEAN  | 1278  | MAX   | 5130    | MIN   | 1.3   | AC-FT | 924900 |       |
| WTR YR 1987 | TOTAL | 215913.2 |       | MEAN  | 592   | MAX   | 1760    | MIN   | 4.5   | AC-FT | 428300 |       |

06659500 LARAMIE RIVER AND PIONEER CANAL NEAR WOODS, WY

LOCATION.--River: Lat 41°08'17", long 105°58'49", in NW1/4 SE1/4 sec.36, T.14 N., R.77 W., Albany County, Hydrologic Unit 10180010, on left bank 100 ft upstream from diversion dam for Pioneer Canal, 2.2 mi downstream from Fox Creek, 2.5 mi northeast of Woods, and 23 mi southwest of Laramie.

Canal: Lat 41°08'21", long 105°58'45", in SE1/4 NE1/4 sec.36, T.14 N., R.77 W., Albany County, on left bank 400 ft downstream from headgate.

DRAINAGE AREA.--434 mi<sup>2</sup>. Drainage area at mouth, 4,565 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1912 to September 1924, October 1926 to September 1927, October 1931 to current year (no winter records since 1972). Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1918-20, 1922, 1924. WSP 1710: Drainage area. WDR WY-84-1: 1983.

GAGE.--River: Water-stage recorder and concrete control. Datum of gage is 7,388.99 ft above National Geodetic Vertical Datum of 1929. Apr. 16 to Nov. 15, 1912, nonrecording gage and Nov. 16, 1912, to Sept. 22, 1915, water-stage recorder 90 ft downstream between dam crest and canal headgates at datum 1.00 ft higher. Sept. 23, 1915, to Sept. 30, 1924, Apr. 19 to Sept. 30, 1927, and Apr. 11, 1932, to Sept. 30, 1935, water-stage recorder at site 50 ft downstream at datum 1.00 ft higher. Oct. 1, 1935, to July 13, 1950, water-stage recorder at site 50 ft downstream at present datum.

Canal: Water-stage recorder and Parshall flume. Elevation of gage is 7,390 ft above National Geodetic Vertical Datum of 1929, from topographic map. Apr. 16, 1912, to Apr. 10, 1923, nonrecording gage; Apr. 11, 1923, to Sept. 30, 1924, and Apr. 19 to June 9, 1927, water-stage recorder; June 10 to Sept. 30, 1927, and Apr. 11, 1932, to May 8, 1938, nonrecording gage; May 9, 1938, to Apr. 26, 1966, water-stage recorder at site 1.5 mi downstream at different datums. Apr. 27, 1966, to May 8, 1967, at present site, at datum 0.06 ft lower.

REMARKS.--Estimated daily discharges: Apr. 2-4, 6-8, 10, 14. Records good. Pioneer Canal diverts from left bank of river at diversion dam 100 ft downstream for irrigation in vicinity of Laramie. Records show combined flow of river and canal. Three small reservoirs upstream from station in Wyoming, total capacity, about 600 acre-ft for irrigation, stock water, and domestic use. Diversions for irrigation of about 5,200 acres upstream from station. Transbasin diversions upstream from station to Cache la Poudre River and tributaries.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD (combined flow river and canal).--Maximum discharge, 5,060 ft<sup>3</sup>/s, June 10, 1923 (river discharge by computation of peak flow over dam); minimum daily (1950-72), 10 ft<sup>3</sup>/s, Aug. 30, Sept. 2-5, 1954.

EXTREMES FOR CURRENT YEAR (combined flow river and canal).--Maximum discharge, 634 ft<sup>3</sup>/s, May 17; minimum daily during period of operation, 23 ft<sup>3</sup>/s, Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR  | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|------|-------|-------|------|------|------|
| 1     |     |     |     |     |     |     | 64   | 442   | 334   | 112  | 77   | 26   |
| 2     |     |     |     |     |     |     | 61   | 462   | 329   | 92   | 57   | 29   |
| 3     |     |     |     |     |     |     | 66   | 385   | 311   | 77   | 49   | 24   |
| 4     |     |     |     |     |     |     | 67   | 312   | 307   | 65   | 48   | 27   |
| 5     |     |     |     |     |     |     | 79   | 274   | 307   | 69   | 37   | 31   |
| 6     |     |     |     |     |     |     | 84   | 275   | 277   | 63   | 39   | 35   |
| 7     |     |     |     |     |     |     | 87   | 334   | 229   | 57   | 41   | 31   |
| 8     |     |     |     |     |     |     | 89   | 359   | 252   | 55   | 46   | 30   |
| 9     |     |     |     |     |     |     | 94   | 367   | 361   | 48   | 46   | 31   |
| 10    |     |     |     |     |     |     | 84   | 380   | 317   | 48   | 42   | 30   |
| 11    |     |     |     |     |     |     | 86   | 385   | 253   | 47   | 38   | 26   |
| 12    |     |     |     |     |     |     | 97   | 386   | 221   | 66   | 32   | 26   |
| 13    |     |     |     |     |     |     | 75   | 406   | 195   | 114  | 32   | 23   |
| 14    |     |     |     |     |     |     | 61   | 430   | 183   | 92   | 32   | 27   |
| 15    |     |     |     |     |     |     | 79   | 386   | 180   | 67   | 35   | 31   |
| 16    |     |     |     |     |     |     | 116  | 446   | 152   | 57   | 37   | 34   |
| 17    |     |     |     |     |     |     | 148  | 553   | 137   | 58   | 34   | 37   |
| 18    |     |     |     |     |     |     | 174  | 538   | 123   | 110  | 30   | 46   |
| 19    |     |     |     |     |     |     | 205  | 471   | 114   | 98   | 29   | 47   |
| 20    |     |     |     |     |     |     | 196  | 450   | 106   | 70   | 27   | 43   |
| 21    |     |     |     |     |     |     | 155  | 529   | 101   | 56   | 28   | 39   |
| 22    |     |     |     |     |     |     | 164  | 498   | 97    | 53   | 32   | 38   |
| 23    |     |     |     |     |     |     | 180  | 428   | 89    | 53   | 32   | 38   |
| 24    |     |     |     |     |     |     | 226  | 378   | 88    | 50   | 38   | 37   |
| 25    |     |     |     |     |     |     | 267  | 411   | 78    | 42   | 51   | 37   |
| 26    |     |     |     |     |     |     | 312  | 467   | 78    | 42   | 50   | 37   |
| 27    |     |     |     |     |     |     | 343  | 435   | 75    | 46   | 41   | 39   |
| 28    |     |     |     |     |     |     | 369  | 389   | 71    | 51   | 37   | 42   |
| 29    |     |     |     |     |     |     | 420  | 359   | 88    | 54   | 35   | 37   |
| 30    |     |     |     |     |     |     | 387  | 353   | 118   | 56   | 33   | 34   |
| 31    |     |     |     |     |     |     | ---  | 334   | ---   | 77   | 31   | ---  |
| TOTAL |     |     |     |     |     |     | 4835 | 12622 | 5571  | 2045 | 1216 | 1012 |
| MEAN  |     |     |     |     |     |     | 161  | 407   | 186   | 66.0 | 39.2 | 33.7 |
| MAX   |     |     |     |     |     |     | 420  | 553   | 361   | 114  | 77   | 47   |
| MIN   |     |     |     |     |     |     | 61   | 274   | 71    | 42   | 27   | 23   |
| AC-FT |     |     |     |     |     |     | 9590 | 25040 | 11050 | 4060 | 2410 | 2010 |

## PLATTE RIVER BASIN

06659580 SAND CREEK AT COLORADO-WYOMING STATE LINE

LOCATION.--Lat 40°59'37", long 105°45'35", in NW1/4 NW1/4 SW1/4 sec.24, T.12 N., R.75 W., Larimer County, CO, Hydrologic Unit 10180010, on right bank 1,200 ft south of Colorado-Wyoming State line and 17 mi southwest of Tie Siding, WY.

DRAINAGE AREA.--29.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1968 to current year (no winter records since 1971).

GAGE.--Water-stage recorder. Elevation of gage is 7,580 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 19, 1977, gage at site 700 ft upstream at different datum.

REMARKS.--Estimated daily discharges: Apr. 1-7. Records good except those for estimated daily discharges, which are poor. Natural flow affected by diversion upstream from station to Cache la Poudre River basin through Wilson Supply ditch. Water imported upstream from station from Deadman Creek in Laramie River basin is diverted through Wilson Supply ditch but is wasted down Sand Creek at times. Diversions for irrigation of about 170 acres upstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,710 ft<sup>3</sup>/s, July 19, 1977, from slope-area measurement of peak flow, gage height, 6.65 ft, from floodmarks, present site and datum; minimum daily during period of operation, 0.13 ft<sup>3</sup>/s, July 26-28, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 72 ft<sup>3</sup>/s, May 21, gage height, 1.40 ft; minimum daily during period of operation, 0.24 ft<sup>3</sup>/s, Aug. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR   | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------|-----|-----|-----|-----|-----|-----|-------|------|-------|-------|-------|-------|
| 1     |     |     |     |     |     |     | 2.9   | 18   | 21    | 7.1   | 2.5   | .50   |
| 2     |     |     |     |     |     |     | 2.9   | 15   | 19    | 5.1   | 2.2   | .44   |
| 3     |     |     |     |     |     |     | 3.0   | 12   | 18    | 4.6   | 1.6   | .38   |
| 4     |     |     |     |     |     |     | 3.5   | 11   | 16    | 4.1   | 1.3   | .38   |
| 5     |     |     |     |     |     |     | 5.2   | 11   | 14    | 3.9   | 1.0   | .38   |
| 6     |     |     |     |     |     |     | 5.0   | 12   | 12    | 3.2   | .80   | .38   |
| 7     |     |     |     |     |     |     | 4.8   | 11   | 13    | 2.5   | .77   | .38   |
| 8     |     |     |     |     |     |     | 5.8   | 20   | 14    | 2.9   | .70   | .38   |
| 9     |     |     |     |     |     |     | 5.8   | 27   | 19    | 2.2   | .63   | .38   |
| 10    |     |     |     |     |     |     | 4.1   | 26   | 21    | 1.6   | .85   | .44   |
| 11    |     |     |     |     |     |     | 4.6   | 27   | 17    | 1.3   | .63   | .50   |
| 12    |     |     |     |     |     |     | 6.1   | 27   | 14    | 1.6   | .56   | .56   |
| 13    |     |     |     |     |     |     | 4.2   | 28   | 12    | 2.2   | .44   | .56   |
| 14    |     |     |     |     |     |     | 3.7   | 28   | 9.5   | 3.0   | .44   | .48   |
| 15    |     |     |     |     |     |     | 6.1   | 27   | 8.4   | 2.2   | .38   | .50   |
| 16    |     |     |     |     |     |     | 9.8   | 29   | 7.8   | 1.7   | .44   | .56   |
| 17    |     |     |     |     |     |     | 11    | 35   | 7.6   | 1.5   | .44   | .63   |
| 18    |     |     |     |     |     |     | 12    | 32   | 8.1   | 1.3   | .38   | .85   |
| 19    |     |     |     |     |     |     | 14    | 28   | 7.6   | 1.3   | .33   | .93   |
| 20    |     |     |     |     |     |     | 15    | 37   | 7.3   | 1.2   | .24   | .93   |
| 21    |     |     |     |     |     |     | 11    | 56   | 7.1   | 1.1   | .24   | .85   |
| 22    |     |     |     |     |     |     | 15    | 38   | 6.8   | 1.1   | .28   | .85   |
| 23    |     |     |     |     |     |     | 18    | 34   | 6.6   | .93   | .33   | .85   |
| 24    |     |     |     |     |     |     | 19    | 33   | 6.6   | .77   | .44   | .85   |
| 25    |     |     |     |     |     |     | 21    | 37   | 6.3   | .77   | .70   | .93   |
| 26    |     |     |     |     |     |     | 19    | 35   | 6.1   | .85   | .93   | .93   |
| 27    |     |     |     |     |     |     | 18    | 32   | 5.6   | .85   | 1.0   | .93   |
| 28    |     |     |     |     |     |     | 18    | 28   | 4.9   | 1.5   | .93   | 1.0   |
| 29    |     |     |     |     |     |     | 20    | 26   | 8.1   | 1.5   | .85   | 1.0   |
| 30    |     |     |     |     |     |     | 18    | 25   | 8.6   | 1.5   | .70   | 1.1   |
| 31    |     |     |     |     |     |     | ---   | 23   | ---   | 1.9   | .70   | ---   |
| TOTAL |     |     |     |     |     |     | 306.5 | 828  | 333.0 | 67.27 | 23.73 | 19.83 |
| MEAN  |     |     |     |     |     |     | 10.2  | 26.7 | 11.1  | 2.17  | .77   | .66   |
| MAX   |     |     |     |     |     |     | 21    | 56   | 21    | 7.1   | 2.5   | 1.1   |
| MIN   |     |     |     |     |     |     | 2.9   | 11   | 4.9   | .77   | .24   | .38   |
| AC-FT |     |     |     |     |     |     | 608   | 1640 | 661   | 133   | 47    | 39    |

## 06660070 LARAMIE RIVER ABOVE HOWELL, WY

LOCATION.--Lat 41°22'05", long 105°35'40", in NW1/4 SW1/4 SW1/4 sec.9, T.16 N., R.73 W., Albany County, Hydrologic Unit 10180010, at bridge on unimproved dirt road, 1.9 mi downstream from Laramie sewage disposal plant, 2.8 mi north of Laramie, and 4.7 mi south of Howell.

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>15... | 1000 | 105                                             | 650                                               | 7.9                            | 4.0                                  | 563                                                  | 9.1                                 |
| DEC<br>05... | 1200 | 95                                              | 695                                               | 7.9                            | 1.0                                  | 585                                                  | 10.4                                |
| JAN<br>22... | 1200 | 30                                              | 680                                               | 7.9                            | 0.0                                  | 562                                                  | 8.4                                 |
| FEB<br>20... | 1400 | 110                                             | 680                                               | 7.5                            | 1.0                                  | 585                                                  | 10.4                                |
| MAR<br>31... | 1400 | 52                                              | 1160                                              | 7.5                            | 4.0                                  | 585                                                  | 10.8                                |
| AUG<br>18... | 0900 | 11                                              | 1840                                              | 7.5                            | 13.0                                 | 590                                                  | 9.2                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>15... | 94                                                             | 64                                                             | 0.6                                                  | 0.25                                                 | 1.2                                                  | 1.5                                                                | 0.28                                        |
| DEC<br>05... | 96                                                             | 42                                                             | 0.9                                                  | 0.37                                                 | 0.33                                                 | 0.7                                                                | 0.36                                        |
| JAN<br>22... | 78                                                             | 25                                                             | 0.6                                                  | 1.1                                                  | 0.10                                                 | 1.2                                                                | 0.41                                        |
| FEB<br>20... | 96                                                             | K30                                                            | 0.3                                                  | 0.25                                                 | 0.75                                                 | 1.0                                                                | 0.13                                        |
| MAR<br>31... | 108                                                            | <1                                                             | 0.4                                                  | 1.3                                                  | 1.0                                                  | 2.3                                                                | 0.52                                        |
| AUG<br>18... | 114                                                            | 160                                                            | 5.2                                                  | 0.30                                                 | 1.4                                                  | 1.7                                                                | 1.3                                         |

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

## 06660500 LARAMIE RIVER AT TWO RIVERS, WY

LOCATION.--Lat 41°28'22", long 105°43'30", in NW1/4 NE1/4 SW1/4 sec.5, T.17 N., R.74 W., Albany County, Hydrologic Unit 10180010, at former gaging station, at old Two Rivers Post Office, 0.6 mi upstream from Little Laramie River, and 14 mi northwest of Laramie.

DRAINAGE AREA.--1,224 mi<sup>2</sup>, of which 188 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--Water years 1966 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>15... | 1400 | 38                                              | 21.0                                 | 0.01                                                            | 0.03                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>17... | 1000 | 27                                              | 18.0                                 | <0.01                                                           | --                                                           | --                        | <0.01                      | <0.01                      | <0.01                      |

## PLATTE RIVER BASIN

06661000 LITTLE LARAMIE RIVER NEAR FILMORE, WY

LOCATION.--Lat 41°17'42", long 106°02'03", in SE1/4 NE1/4 SE1/4 sec.4, T.15 N., R.77 W., Albany County, Hydrologic Unit 10180010, on right bank 40 ft downstream from State Highway 130, 1.2 mi west of Filmore, and 4.4 mi downstream from North Fork.

DRAINAGE AREA.--157 mi<sup>2</sup>. Area at site used prior to Sept. 8, 1976, 156 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1902 to September 1903 (published as "near Hatton"), May 1911 to November 1926, October 1932 to current year (no winter records since 1971). Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1903, 1914, 1922-26. WSP 1440: 1902. WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 7,610 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 16, 1938, nonrecording gages, and Sept. 16, 1938 to Sept. 7, 1976, water-stage recorder, at sites 0.7 mi upstream at different datums.

REMARKS.--Estimated daily discharges: April 1-17. Records good except those for estimated daily discharges, which are poor. Ten small reservoirs upstream from station, combined capacity, about 160 acre-ft, for irrigation, stock water, recreation, and domestic use. Diversions upstream from station for irrigation of about 11,020 acres, of which about 20 acres are downstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by Geological Survey.

AVERAGE DISCHARGE.--55 years (water years 1903, 1912-26, 1933-71), 103 ft<sup>3</sup>/s, 74,620 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,450 ft<sup>3</sup>/s, June 10, 1965, gage height, 5.33 ft, site and datum then in use; minimum daily determined, 1.0 ft<sup>3</sup>/s, Sept. 17-20, 1913.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 482 ft<sup>3</sup>/s, May 18, gage height, 2.81 ft; minimum daily during period of operation, 17 ft<sup>3</sup>/s, Aug. 20, Sept. 10, 13, 14, 26-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR  | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|------|-------|------|------|------|------|
| 1     |     |     |     |     |     |     | 34   | 155   | 152  | 63   | 47   | 19   |
| 2     |     |     |     |     |     |     | 33   | 174   | 117  | 61   | 39   | 19   |
| 3     |     |     |     |     |     |     | 33   | 148   | 103  | 57   | 35   | 18   |
| 4     |     |     |     |     |     |     | 36   | 123   | 103  | 54   | 31   | 18   |
| 5     |     |     |     |     |     |     | 35   | 119   | 105  | 52   | 28   | 18   |
| 6     |     |     |     |     |     |     | 34   | 125   | 107  | 46   | 26   | 18   |
| 7     |     |     |     |     |     |     | 37   | 119   | 127  | 43   | 28   | 18   |
| 8     |     |     |     |     |     |     | 46   | 134   | 228  | 39   | 38   | 18   |
| 9     |     |     |     |     |     |     | 52   | 160   | 256  | 37   | 33   | 18   |
| 10    |     |     |     |     |     |     | 45   | 195   | 191  | 36   | 28   | 17   |
| 11    |     |     |     |     |     |     | 44   | 214   | 145  | 35   | 25   | 18   |
| 12    |     |     |     |     |     |     | 45   | 229   | 127  | 51   | 24   | 19   |
| 13    |     |     |     |     |     |     | 37   | 300   | 113  | 59   | 23   | 17   |
| 14    |     |     |     |     |     |     | 36   | 324   | 107  | 46   | 22   | 17   |
| 15    |     |     |     |     |     |     | 43   | 294   | 105  | 40   | 21   | 18   |
| 16    |     |     |     |     |     |     | 40   | 311   | 105  | 37   | 25   | 18   |
| 17    |     |     |     |     |     |     | 45   | 377   | 92   | 37   | 23   | 18   |
| 18    |     |     |     |     |     |     | 47   | 405   | 86   | 46   | 20   | 18   |
| 19    |     |     |     |     |     |     | 49   | 308   | 88   | 38   | 18   | 18   |
| 20    |     |     |     |     |     |     | 46   | 287   | 84   | 36   | 17   | 18   |
| 21    |     |     |     |     |     |     | 43   | 341   | 77   | 33   | 18   | 18   |
| 22    |     |     |     |     |     |     | 51   | 317   | 73   | 36   | 28   | 18   |
| 23    |     |     |     |     |     |     | 49   | 242   | 67   | 32   | 27   | 18   |
| 24    |     |     |     |     |     |     | 61   | 253   | 63   | 28   | 28   | 18   |
| 25    |     |     |     |     |     |     | 72   | 278   | 61   | 27   | 30   | 18   |
| 26    |     |     |     |     |     |     | 82   | 215   | 58   | 28   | 31   | 17   |
| 27    |     |     |     |     |     |     | 81   | 206   | 54   | 39   | 32   | 17   |
| 28    |     |     |     |     |     |     | 95   | 185   | 51   | 36   | 28   | 17   |
| 29    |     |     |     |     |     |     | 121  | 169   | 62   | 48   | 24   | 18   |
| 30    |     |     |     |     |     |     | 121  | 162   | 75   | 55   | 22   | 18   |
| 31    |     |     |     |     |     |     | ---  | 157   | ---  | 67   | 20   | ---  |
| TOTAL |     |     |     |     |     |     | 1593 | 7026  | 3182 | 1342 | 839  | 537  |
| MEAN  |     |     |     |     |     |     | 53.1 | 227   | 106  | 43.3 | 27.1 | 17.9 |
| MAX   |     |     |     |     |     |     | 121  | 405   | 256  | 67   | 47   | 19   |
| MIN   |     |     |     |     |     |     | 33   | 119   | 51   | 27   | 17   | 17   |
| AC-FT |     |     |     |     |     |     | 3160 | 13940 | 6310 | 2660 | 1660 | 1070 |

06661500 LITTLE LARAMIE RIVER AT TWO RIVERS, WY

LOCATION.--Lat 41°28'07", long 105°43'56", in SE1/4 SE1/4 SE1/4 sec.6, T.17 N., R.74 W., Albany County, Hydrologic Unit 10180010, at former gaging station, at old Two Rivers Post Office, 0.5 mi upstream from mouth, and 14 mi northwest of Laramie.

DRAINAGE AREA.--376 mi<sup>2</sup>, of which 58 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--Water years 1965 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>15... | 1500 | 14                                              | 20.0                                 | <0.01                                                           | 0.01                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>17... | 0900 | 9.0                                             | 18.0                                 | <0.01                                                           | --                                                           | --                        | <0.01                      | <0.01                      | <0.01                      |



## PLATTE RIVER BASIN

06661585 LARAMIE RIVER NEAR BOSLER, WY

LOCATION.--Lat 41°33'17", long 105°40'58", in NW1/4 NW1/4 NE1/4 sec.10, T.18 N., R.74 W., Albany County, Hydrologic Unit 10180010, on left bank 50 ft upstream from bridge on U.S. Highways 30 and 287, 0.2 mi northwest of Bosler Junction, 1.7 mi south of Bosler, and 2.0 mi downstream from Soil Bank Boughton Canal diversion dam.

DRAINAGE AREA.--1,790 mi<sup>2</sup>, of which 283 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 7,030 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 7-23, Nov. 30 to Mar. 31, June 13-15. Records fair except those for estimated daily discharges and Aug. 25 to Sept. 30, which are poor. Natural flow of stream affected by transbasin diversions, storage reservoirs, diversion upstream from station for irrigation of about 54,700 acres, of which about 2,300 acres are downstream from station, and return flow from irrigated areas.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by Geological Survey.

AVERAGE DISCHARGE.--15 years, 198 ft<sup>3</sup>/s, 143,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,480 ft<sup>3</sup>/s, June 11, 1986, gage height, 7.39 ft; maximum gage height, 8.40 ft, Apr. 22, 1973 (backwater from ice); minimum daily discharge, 0.05 ft<sup>3</sup>/s, Sept. 27, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 416 ft<sup>3</sup>/s, May 23, gage height, 2.23 ft; maximum gage height, 2.48 ft, Mar. 11 (backwater from ice); minimum daily discharge, 0.5 ft<sup>3</sup>/s, Sept. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV      | DEC  | JAN  | FEB  | MAR  | APR  | MAY   | JUN  | JUL   | AUG    | SEP    |
|-------------|-------|----------|------|------|------|------|------|-------|------|-------|--------|--------|
| 1           | 72    | 147      | 150  | 62   | 53   | 45   | 147  | 236   | 249  | 41    | 14     | 9.6    |
| 2           | 86    | 158      | 120  | 64   | 55   | 43   | 139  | 249   | 201  | 41    | 18     | 9.6    |
| 3           | 101   | 154      | 110  | 66   | 54   | 53   | 148  | 256   | 159  | 45    | 12     | 10     |
| 4           | 111   | 161      | 100  | 65   | 53   | 67   | 144  | 277   | 141  | 47    | 7.9    | 11     |
| 5           | 114   | 164      | 100  | 72   | 53   | 82   | 141  | 236   | 126  | 57    | 6.0    | 9.6    |
| 6           | 117   | 164      | 99   | 70   | 52   | 101  | 129  | 186   | 109  | 43    | 6.0    | 9.6    |
| 7           | 117   | 130      | 95   | 70   | 63   | 126  | 117  | 144   | 96   | 43    | 6.6    | 8.7    |
| 8           | 123   | 95       | 90   | 70   | 65   | 144  | 117  | 106   | 106  | 33    | 5.8    | 11     |
| 9           | 124   | 100      | 86   | 67   | 67   | 178  | 117  | 88    | 117  | 30    | 4.6    | 7.2    |
| 10          | 126   | 100      | 81   | 66   | 68   | 188  | 98   | 83    | 144  | 28    | 5.5    | 4.2    |
| 11          | 138   | 130      | 78   | 61   | 72   | 202  | 104  | 83    | 147  | 25    | 4.6    | 4.1    |
| 12          | 147   | 120      | 78   | 65   | 77   | 161  | 93   | 83    | 111  | 25    | 3.9    | 3.9    |
| 13          | 151   | 130      | 77   | 71   | 79   | 185  | 86   | 83    | 100  | 33    | 3.2    | 4.6    |
| 14          | 147   | 150      | 76   | 65   | 82   | 185  | 91   | 111   | 90   | 37    | 2.7    | 6.0    |
| 15          | 138   | 152      | 76   | 60   | 77   | 200  | 93   | 163   | 86   | 43    | 2.3    | 6.0    |
| 16          | 141   | 159      | 75   | 58   | 72   | 168  | 91   | 255   | 73   | 45    | 1.3    | 5.5    |
| 17          | 138   | 160      | 74   | 56   | 65   | 164  | 96   | 306   | 67   | 51    | .81    | 3.6    |
| 18          | 135   | 160      | 73   | 50   | 60   | 130  | 96   | 355   | 63   | 43    | .50    | 2.7    |
| 19          | 129   | 163      | 71   | 48   | 50   | 130  | 93   | 324   | 55   | 33    | .10    | 2.2    |
| 20          | 135   | 164      | 71   | 47   | 47   | 127  | 123  | 283   | 49   | 28    | .50    | 1.8    |
| 21          | 138   | 170      | 71   | 44   | 50   | 120  | 147  | 277   | 49   | 25    | 2.5    | .50    |
| 22          | 151   | 171      | 70   | 40   | 48   | 110  | 171  | 330   | 41   | 20    | 6.6    | .20    |
| 23          | 171   | 172      | 70   | 37   | 47   | 100  | 238  | 401   | 38   | 16    | 13     | .10    |
| 24          | 188   | 176      | 70   | 39   | 45   | 110  | 243  | 389   | 37   | 16    | 17     | .10    |
| 25          | 188   | 171      | 69   | 41   | 40   | 112  | 222  | 358   | 32   | 18    | 21     | .10    |
| 26          | 172   | 171      | 67   | 44   | 40   | 115  | 219  | 331   | 27   | 12    | 21     | .10    |
| 27          | 164   | 202      | 66   | 46   | 44   | 113  | 236  | 379   | 24   | 8.7   | 21     | .05    |
| 28          | 158   | 171      | 64   | 46   | 43   | 120  | 215  | 379   | 24   | 7.2   | 19     | .79    |
| 29          | 151   | 198      | 62   | 48   | ---  | 129  | 222  | 348   | 33   | 6.3   | 16     | 1.7    |
| 30          | 144   | 189      | 62   | 50   | ---  | 126  | 222  | 317   | 40   | 8.7   | 14     | 2.1    |
| 31          | 141   | ---      | 60   | 50   | ---  | 123  | ---  | 297   | ---  | 7.2   | 11     | ---    |
| TOTAL       | 4256  | 4652     | 2511 | 1738 | 1621 | 3957 | 4398 | 7713  | 2634 | 916.1 | 268.41 | 136.64 |
| MEAN        | 137   | 155      | 81.0 | 56.1 | 57.9 | 128  | 147  | 249   | 87.8 | 29.6  | 8.66   | 4.55   |
| MAX         | 188   | 202      | 150  | 72   | 82   | 202  | 243  | 401   | 249  | 57    | 21     | 11     |
| MIN         | 72    | 95       | 60   | 37   | 40   | 43   | 86   | 83    | 24   | 6.3   | .10    | .05    |
| AC-FT       | 8440  | 9230     | 4980 | 3450 | 3220 | 7850 | 8720 | 15300 | 5220 | 1820  | 532    | 271    |
| CAL YR 1986 | TOTAL | 128050   |      | MEAN | 351  | MAX  | 4150 | MIN   | 40   | AC-FT | 254000 |        |
| WTR YR 1987 | TOTAL | 34801.15 |      | MEAN | 95.3 | MAX  | 401  | MIN   | .05  | AC-FT | 69030  |        |

## 06662000 LARAMIE RIVER NEAR LOOKOUT, WY

LOCATION.--Lat 41°45'44", long 105°41'16", in NE1/4 NW1/4 SE1/4 sec.27, T.21 N., R.74 W., Albany County, Hydrologic Unit 10180010, on right bank 155 ft downstream from bridge on county road, 1.0 mi upstream from Wheatland Reservoir No. 2, and 9.0 mi northeast of Lookout.

DRAINAGE AREA.--2,174 mi<sup>2</sup>, of which 603 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--May 1912 to December 1917, January 1921 to December 1927, April 1932 to current year (no winter records since 1972). Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1913-17. WSP 1710: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,962.68 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 22, 1915, nonrecording gage and Apr. 22, 1915, to Aug. 31, 1917, water-stage recorder, at bridge, 155 ft upstream at same datum. Oct. 14, 1931, to Sept. 17, 1938, at site 125 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Apr. 1-13. Records good except those for estimated daily discharges, which are poor. Natural flow of stream affected by transbasin diversions, storage reservoirs, diversion for irrigation of about 108,000 acres upstream from station, and return flow from irrigated areas.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by Geological Survey.

AVERAGE DISCHARGE.--51 years (water years 1913-17, 1922-27, 1933-72), 131 ft<sup>3</sup>/s, 94,910 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,380 ft<sup>3</sup>/s, June 29, 1983, gage height, 6.99 ft; maximum gage height, about 8.0 ft, occurred in 1973 (backwater from ice); no flow at times in 1934-35, 1939-40, 1954-55, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 365 ft<sup>3</sup>/s, May 24, gage height, 2.23 ft; maximum gage height during period of operation, 2.77 ft, Apr. 7 (backwater from ice); minimum daily during period of operation, 0.48 ft<sup>3</sup>/s, Sept. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR  | MAY   | JUN  | JUL  | AUG    | SEP   |
|-------|-----|-----|-----|-----|-----|-----|------|-------|------|------|--------|-------|
| 1     |     |     |     |     |     |     | 135  | 198   | 241  | 30   | 23     | 1.7   |
| 2     |     |     |     |     |     |     | 130  | 211   | 208  | 33   | 20     | 3.2   |
| 3     |     |     |     |     |     |     | 135  | 218   | 169  | 33   | 24     | 2.3   |
| 4     |     |     |     |     |     |     | 130  | 235   | 138  | 35   | 25     | 2.3   |
| 5     |     |     |     |     |     |     | 130  | 235   | 120  | 36   | 21     | 2.2   |
| 6     |     |     |     |     |     |     | 120  | 195   | 108  | 42   | 20     | 1.9   |
| 7     |     |     |     |     |     |     | 110  | 160   | 97   | 35   | 21     | 1.9   |
| 8     |     |     |     |     |     |     | 110  | 132   | 100  | 28   | 24     | 1.7   |
| 9     |     |     |     |     |     |     | 110  | 105   | 111  | 25   | 23     | 1.9   |
| 10    |     |     |     |     |     |     | 94   | 91    | 138  | 23   | 18     | 1.9   |
| 11    |     |     |     |     |     |     | 96   | 91    | 147  | 21   | 16     | 2.0   |
| 12    |     |     |     |     |     |     | 82   | 91    | 138  | 21   | 16     | 1.9   |
| 13    |     |     |     |     |     |     | 78   | 85    | 129  | 21   | 16     | 1.9   |
| 14    |     |     |     |     |     |     | 79   | 85    | 111  | 24   | 14     | 1.2   |
| 15    |     |     |     |     |     |     | 82   | 117   | 85   | 25   | 7.5    | 2.0   |
| 16    |     |     |     |     |     |     | 82   | 171   | 74   | 30   | 3.2    | 3.9   |
| 17    |     |     |     |     |     |     | 85   | 240   | 64   | 33   | 2.0    | 3.9   |
| 18    |     |     |     |     |     |     | 88   | 276   | 57   | 36   | 1.9    | 3.2   |
| 19    |     |     |     |     |     |     | 88   | 300   | 52   | 31   | 1.3    | 2.3   |
| 20    |     |     |     |     |     |     | 105  | 265   | 46   | 24   | 1.0    | 1.9   |
| 21    |     |     |     |     |     |     | 126  | 238   | 42   | 21   | .74    | 1.7   |
| 22    |     |     |     |     |     |     | 141  | 255   | 38   | 19   | 1.6    | 1.6   |
| 23    |     |     |     |     |     |     | 172  | 306   | 36   | 16   | 1.6    | 1.3   |
| 24    |     |     |     |     |     |     | 205  | 354   | 33   | 14   | 1.7    | 1.2   |
| 25    |     |     |     |     |     |     | 205  | 336   | 30   | 12   | 1.3    | .90   |
| 26    |     |     |     |     |     |     | 192  | 329   | 30   | 12   | 1.7    | .67   |
| 27    |     |     |     |     |     |     | 198  | 322   | 25   | 13   | 2.3    | .48   |
| 28    |     |     |     |     |     |     | 205  | 351   | 23   | 11   | 2.2    | .58   |
| 29    |     |     |     |     |     |     | 192  | 329   | 25   | 11   | 2.9    | .67   |
| 30    |     |     |     |     |     |     | 198  | 304   | 28   | 11   | 1.9    | .50   |
| 31    |     |     |     |     |     |     | ---  | 279   | ---  | 24   | 1.5    | ---   |
| TOTAL |     |     |     |     |     |     | 3903 | 6904  | 2643 | 750  | 317.34 | 54.80 |
| MEAN  |     |     |     |     |     |     | 130  | 223   | 88.1 | 24.2 | 10.2   | 1.83  |
| MAX   |     |     |     |     |     |     | 205  | 354   | 241  | 42   | 25     | 3.9   |
| MIN   |     |     |     |     |     |     | 78   | 85    | 23   | 11   | .74    | .48   |
| AC-FT |     |     |     |     |     |     | 7740 | 13690 | 5240 | 1490 | 629    | 109   |

06664400 SYBILLE CREEK ABOVE MULE CREEK, NEAR WHEATLAND, WY

LOCATION.--Lat 41°50'39", long 105°13'15", in NE1/4 SW1/4 SE1/4 sec.27, T.22 N., R.70 W., Platte County, Hydrologic Unit 10180011, on right bank just upstream from bridge on U.S. Highway 34, 900 ft upstream from Mule Creek, 2.9 mi upstream from Bluegrass Creek, and 20 mi southwest of Wheatland.

DRAINAGE AREA.--194 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1974 to current year (no winter records).

GAGE.--Water-stage recorder. Elevation of gage is 5,340 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Mar. 1-9. Records good except those for estimated daily discharges, which are poor. Seven small diversions upstream from station, combined capacity, about 400 acre-ft, for irrigation. Diversions upstream from station for irrigation of about 2,020 acres, of which about 80 acres are downstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,100 ft<sup>3</sup>/s, May 14, 1984, gage height, 6.77 ft and May 22, 1983, gage height, 6.64 ft (backwater from bridge construction), from correlation with peak discharge at station 11.0 mi downstream; maximum gage height, 7.68 ft, July 22, 1983 (backwater from bridge construction); minimum daily discharge, 0.49 ft<sup>3</sup>/s, Sept. 8, 9, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18 ft<sup>3</sup>/s, May 27, gage height, 1.82 ft; minimum daily during period of operation, 1.9 ft<sup>3</sup>/s, Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-----|-----|-----|-----|-----|-------|-------|-------|-------|-------|-------|-------|
| 1     |     |     |     |     |     | 6.0   | 10    | 10    | 11    | 4.5   | 2.1   | 4.5   |
| 2     |     |     |     |     |     | 6.0   | 9.4   | 9.9   | 12    | 4.9   | 1.9   | 4.1   |
| 3     |     |     |     |     |     | 6.0   | 9.4   | 10    | 12    | 5.3   | 2.4   | 3.3   |
| 4     |     |     |     |     |     | 6.0   | 8.9   | 9.9   | 10    | 5.3   | 2.7   | 4.1   |
| 5     |     |     |     |     |     | 6.0   | 8.5   | 9.4   | 9.9   | 4.9   | 3.0   | 4.5   |
| 6     |     |     |     |     |     | 6.0   | 8.9   | 7.6   | 9.4   | 4.1   | 5.3   | 3.7   |
| 7     |     |     |     |     |     | 9.0   | 9.4   | 8.0   | 7.6   | 4.5   | 6.4   | 4.1   |
| 8     |     |     |     |     |     | 11    | 9.4   | 7.2   | 8.5   | 4.9   | 6.4   | 4.1   |
| 9     |     |     |     |     |     | 10    | 9.4   | 7.6   | 11    | 5.3   | 7.0   | 4.1   |
| 10    |     |     |     |     |     | 8.0   | 9.9   | 7.2   | 12    | 4.9   | 5.7   | 4.5   |
| 11    |     |     |     |     |     | 7.6   | 8.9   | 7.6   | 11    | 4.9   | 4.9   | 4.9   |
| 12    |     |     |     |     |     | 7.6   | 9.9   | 6.8   | 9.9   | 5.7   | 5.7   | 4.9   |
| 13    |     |     |     |     |     | 6.1   | 11    | 5.9   | 9.4   | 5.3   | 5.3   | 4.9   |
| 14    |     |     |     |     |     | 6.4   | 8.0   | 5.7   | 6.4   | 4.9   | 4.9   | 4.9   |
| 15    |     |     |     |     |     | 6.8   | 6.6   | 6.4   | 6.8   | 4.5   | 4.1   | 4.9   |
| 16    |     |     |     |     |     | 6.8   | 6.8   | 6.4   | 7.2   | 5.3   | 3.4   | 5.3   |
| 17    |     |     |     |     |     | 6.8   | 8.9   | 7.6   | 5.7   | 5.7   | 3.0   | 5.3   |
| 18    |     |     |     |     |     | 6.8   | 11    | 9.4   | 4.5   | 5.3   | 3.0   | 5.7   |
| 19    |     |     |     |     |     | 6.8   | 7.2   | 9.4   | 4.5   | 4.5   | 2.7   | 5.3   |
| 20    |     |     |     |     |     | 7.2   | 9.4   | 9.4   | 4.9   | 4.5   | 3.3   | 5.3   |
| 21    |     |     |     |     |     | 7.6   | 11    | 10    | 4.9   | 4.1   | 3.3   | 5.3   |
| 22    |     |     |     |     |     | 9.4   | 10    | 11    | 4.9   | 3.7   | 5.3   | 4.9   |
| 23    |     |     |     |     |     | 9.4   | 9.9   | 10    | 4.9   | 3.3   | 5.3   | 4.5   |
| 24    |     |     |     |     |     | 9.9   | 11    | 10    | 4.9   | 3.0   | 5.3   | 4.5   |
| 25    |     |     |     |     |     | 9.9   | 12    | 13    | 5.7   | 3.0   | 5.3   | 4.1   |
| 26    |     |     |     |     |     | 8.5   | 11    | 14    | 5.7   | 2.4   | 4.9   | 3.7   |
| 27    |     |     |     |     |     | 10    | 9.4   | 15    | 4.9   | 2.3   | 5.7   | 3.3   |
| 28    |     |     |     |     |     | 8.0   | 11    | 17    | 4.9   | 2.3   | 5.3   | 3.7   |
| 29    |     |     |     |     |     | 8.0   | 10    | 15    | 5.7   | 2.4   | 4.9   | 4.1   |
| 30    |     |     |     |     |     | 7.2   | 11    | 15    | 5.7   | 2.3   | 4.5   | 4.5   |
| 31    |     |     |     |     |     | 9.4   | ---   | 13    | ---   | 2.4   | 4.5   | ---   |
| TOTAL |     |     |     |     |     | 240.2 | 287.2 | 304.4 | 225.9 | 130.4 | 137.5 | 135.0 |
| MEAN  |     |     |     |     |     | 7.75  | 9.57  | 9.82  | 7.53  | 4.21  | 4.44  | 4.50  |
| MAX   |     |     |     |     |     | 11    | 12    | 17    | 12    | 5.7   | 7.0   | 5.7   |
| MIN   |     |     |     |     |     | 6.0   | 6.6   | 5.7   | 4.5   | 2.3   | 1.9   | 3.3   |
| AC-FT |     |     |     |     |     | 476   | 570   | 604   | 448   | 259   | 273   | 268   |

06664400 SYBILLE CREEK ABOVE MULE CREEK, NEAR WHEATLAND, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1984 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>15... | 1100 | 20                                              | 17.0                                 | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>16... | 1000 | 17                                              | 17.0                                 | <0.01                                                           | --                                                           | --                        | <0.01                      | <0.01                      | <0.01                      |

## PLATTE RIVER BASIN

06665790 SYBILLE CREEK ABOVE CANAL NO. 3, NEAR WHEATLAND, WY

LOCATION.--Lat 41°54'40", long 105°07'36", in NW1/4 SW1/4 NE1/4 sec.4, T.22 N., R.69 W., Platte County, Hydrologic Unit 10180011, on right bank 100 ft upstream from State Highway 34, 200 ft downstream from Deadhead Creek, 2.7 mi upstream from Canal No. 3, and 19.7 mi southwest of Wheatland.

PERIOD OF RECORD.--April 1980 to current year (no winter records).

GAGE.--Water-stage recorder. Elevation of gage is 5,040 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Most of flow during irrigation season is water released from Wheatland Reservoir No. 2, capacity 98,930 acre-ft, on the Laramie River and diverted down Bluegrass Creek for irrigation of land near Wheatland. Diversions for irrigation of about 4,400 acres upstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,400 ft<sup>3</sup>/s, May 13, 1984, gage height, 4.26 ft; no flow Sept. 1-4, 11, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 210 ft<sup>3</sup>/s, June 18, gage height, 1.61 ft; minimum daily during period of operation, 11 ft<sup>3</sup>/s, Apr. 18, 19, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
| 1     |     |     |     |     |     | 19   | 19   | 45   | 36   | 96   | 96   | 30   |
| 2     |     |     |     |     |     | 19   | 18   | 42   | 28   | 101  | 92   | 30   |
| 3     |     |     |     |     |     | 19   | 18   | 43   | 28   | 113  | 88   | 25   |
| 4     |     |     |     |     |     | 19   | 17   | 56   | 24   | 126  | 90   | 25   |
| 5     |     |     |     |     |     | 19   | 17   | 70   | 30   | 126  | 92   | 42   |
| 6     |     |     |     |     |     | 19   | 18   | 62   | 49   | 123  | 99   | 42   |
| 7     |     |     |     |     |     | 28   | 18   | 51   | 64   | 123  | 121  | 30   |
| 8     |     |     |     |     |     | 36   | 17   | 46   | 56   | 93   | 128  | 24   |
| 9     |     |     |     |     |     | 30   | 14   | 43   | 79   | 92   | 126  | 24   |
| 10    |     |     |     |     |     | 26   | 15   | 77   | 92   | 79   | 128  | 26   |
| 11    |     |     |     |     |     | 26   | 13   | 75   | 64   | 72   | 128  | 26   |
| 12    |     |     |     |     |     | 22   | 13   | 68   | 56   | 62   | 128  | 26   |
| 13    |     |     |     |     |     | 20   | 13   | 71   | 51   | 56   | 123  | 26   |
| 14    |     |     |     |     |     | 20   | 13   | 77   | 48   | 46   | 115  | 31   |
| 15    |     |     |     |     |     | 20   | 13   | 99   | 46   | 42   | 110  | 33   |
| 16    |     |     |     |     |     | 21   | 13   | 110  | 41   | 56   | 105  | 33   |
| 17    |     |     |     |     |     | 22   | 12   | 115  | 38   | 72   | 103  | 40   |
| 18    |     |     |     |     |     | 23   | 11   | 120  | 68   | 88   | 108  | 40   |
| 19    |     |     |     |     |     | 28   | 11   | 113  | 118  | 90   | 99   | 38   |
| 20    |     |     |     |     |     | 33   | 13   | 123  | 110  | 90   | 103  | 37   |
| 21    |     |     |     |     |     | 32   | 13   | 146  | 101  | 83   | 92   | 37   |
| 22    |     |     |     |     |     | 32   | 13   | 110  | 90   | 99   | 118  | 36   |
| 23    |     |     |     |     |     | 31   | 12   | 58   | 85   | 96   | 126  | 36   |
| 24    |     |     |     |     |     | 34   | 13   | 58   | 90   | 96   | 115  | 34   |
| 25    |     |     |     |     |     | 34   | 11   | 131  | 94   | 94   | 96   | 33   |
| 26    |     |     |     |     |     | 36   | 29   | 115  | 94   | 96   | 73   | 31   |
| 27    |     |     |     |     |     | 36   | 45   | 90   | 90   | 96   | 64   | 31   |
| 28    |     |     |     |     |     | 29   | 46   | 85   | 90   | 94   | 54   | 31   |
| 29    |     |     |     |     |     | 20   | 46   | 75   | 115  | 99   | 46   | 32   |
| 30    |     |     |     |     |     | 19   | 46   | 54   | 113  | 103  | 40   | 31   |
| 31    |     |     |     |     |     | 19   | ---  | 42   | ---  | 101  | 33   | ---  |
| TOTAL |     |     |     |     |     | 791  | 570  | 2470 | 2088 | 2803 | 3039 | 960  |
| MEAN  |     |     |     |     |     | 25.5 | 19.0 | 79.7 | 69.6 | 90.4 | 98.0 | 32.0 |
| MAX   |     |     |     |     |     | 36   | 46   | 146  | 118  | 126  | 128  | 42   |
| MIN   |     |     |     |     |     | 19   | 11   | 42   | 24   | 42   | 33   | 24   |
| AC-FT |     |     |     |     |     | 1570 | 1130 | 4900 | 4140 | 5560 | 6030 | 1900 |

06669050 WHEATLAND CREEK BELOW WHEATLAND, WY

LOCATION.--Lat 42°05'05", long 104°57'02", in SW1/4 SW1/4 NE1/4 sec.1, T.24 N., R.68 W., Platte County, Hydrologic Unit 10180011, 50 ft upstream from bridge on U.S. Highway 87, 50 ft downstream from sewage lagoons, and 1.6 mi north of Wheatland city limits.

PERIOD OF RECORD.--Water years 1983 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>15... | 1400 | 18                                              | 1160                                              | 8.4                            | 11.0                                 | 645                                                  | 10.8                                |
| DEC<br>04... | 1330 | 12                                              | 1200                                              | 8.5                            | 1.0                                  | 645                                                  | 13.8                                |
| JAN<br>13... | 1100 | 9.0                                             | 1220                                              | 7.9                            | 2.0                                  | 636                                                  | 13.0                                |
| FEB<br>20... | 0915 | 5.6                                             | 1260                                              | 7.8                            | 2.0                                  | 645                                                  | 12.6                                |
| MAR<br>31... | 1000 | 7.5                                             | 1270                                              | 8.1                            | 3.0                                  | 640                                                  | 12.3                                |
| AUG<br>17... | 1100 | 2.2                                             | 1180                                              | 8.0                            | 27.0                                 | 641                                                  | 9.3                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------|
| OCT<br>15... | 116                                                            | 92                                                             | 3.4                                                  | 0.16                                                 | 1.5                                                  | 1.7                                                                 | 0.17                                        |
| DEC<br>04... | 115                                                            | K22                                                            | 4.3                                                  | 0.12                                                 | 1.7                                                  | 1.8                                                                 | 0.13                                        |
| JAN<br>13... | 113                                                            | 40                                                             | 4.1                                                  | 0.45                                                 | 2.0                                                  | 2.4                                                                 | 0.28                                        |
| FEB<br>20... | 108                                                            | 48                                                             | 3.8                                                  | 0.34                                                 | 1.8                                                  | 2.1                                                                 | 0.26                                        |
| MAR<br>31... | 109                                                            | 120                                                            | 4.0                                                  | 0.27                                                 | 1.6                                                  | 1.9                                                                 | 0.32                                        |
| AUG<br>17... | 140                                                            | 210                                                            | 3.0                                                  | 0.47                                                 | 2.7                                                  | 3.2                                                                 | 0.88                                        |

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



## PLATTE RIVER BASIN

413918105021401 CHUGWATER CREEK AT PLATTE-LARAMIE COUNTY LINE, NEAR CHUGWATER, WY

LOCATION.--Lat 41°39'18", long 105°02'14", in NW1/4 NW1/4 NW1/4 sec.5, T.19 N., R.68 W., Laramie County, Hydrologic Unit 10180011, at county road bridge, 1000 ft northwest of McDonald Ranch, about 4.2 mi downstream from Spring Creek, and 14 mi southwest of Chugwater.

PERIOD OF RECORD.--May 1984 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUL<br>16... | 1400 | 3.2                                             | 19.0                                 | <0.01                                                           | --                                                           | --                        | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>30... | 1300 | 2.5                                             | 12.0                                 | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

06669500 CHUGWATER CREEK AT CHUGWATER, WY

LOCATION.--Lat 41°45'10", long 104°48'55", in NE1/4 NW1/4 NE1/4 sec.31, T.21 N., R.66 W., Platte County, Hydrologic Unit 10180011, 270 ft upstream from old highway bridge, 0.25 mi southeast of Chugwater, and 9.5 mi upstream from headgate of Ramsey Ditch.

PERIOD OF RECORD.--May 1984 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| MAY<br>13... | 1100 | 5.7                                             | 17.0                                 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUN<br>15... | 0900 | 18                                              | 13.0                                 | <0.01                                                           | 0.03                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |

## 06670500 LARAMIE RIVER NEAR FORT LARAMIE, WY

LOCATION.--Lat 42°12'02", long 104°32'16", in NE1/4 SE1/4 NE1/4 sec.28, T.26 N., R.64 W., Goshen County, Hydrologic Unit 10180011, on right bank 600 ft upstream from bridge on county road, 0.6 mi upstream from mouth, and 1.1 mi southwest of Fort Laramie.

DRAINAGE AREA.--4,564 mi<sup>2</sup>, of which 631 mi<sup>2</sup> is probably noncontributing. Drainage area at mouth, 4,565 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1915 to current year (no winter records prior to 1927). Monthly discharge only for some periods, published in WSP 1310. Records for water years 1926-39, previously published including diversions to Gering-Fort Laramie Canal, were adjusted to exclude flow in the canal in WSP 1310. Prior to October 1931, published as "at Fort Laramie."

REVISED RECORDS.--WSP 1918: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,220 ft above National Geodetic Vertical Datum of 1929, from topographic map. Apr. 4, 1915, to Mar. 31, 1925, nonrecording gage at site 0.1 mi downstream at different datum. Apr. 1, 1925, to Sept. 30, 1932, nonrecording gage and Oct. 1, 1932, to Aug. 20, 1935, water-stage recorder at site 4.3 mi upstream at different datum. Aug. 21, 1935, to Nov. 2, 1970, water-stage recorder at site 0.3 mi upstream at different datum. Nov. 3, 1970, to May 9, 1973, water-stage recorder 0.1 mi downstream at different datum. May 10, 1973, to Apr. 5, 1977, water-stage recorder 4.3 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 11, Nov. 10, 12, 25-30, Dec. 1-3, 10, 11, 18, Jan. 9, 10, 16-24, Feb. 4-13, June 2-7, 11-15, and Aug. 19-23. Records good except those for October to March, June, and September, which are fair. Diversion, at times, to Gering-Fort Laramie Canal, 5.4 mi upstream. Natural flow of stream affected by transbasin diversions, storage reservoirs, ground-water withdrawals and diversions for irrigation of about 176,000 acres upstream from station, and return flow from irrigated areas. U.S. Corps of Engineers satellite telemeter at station.

COOPERATION.--Three discharge measurements provided by the Wyoming State Engineer's Office.

AVERAGE DISCHARGE.--31 years (water years 1957-87), 164 ft<sup>3</sup>/s, 118,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,260 ft<sup>3</sup>/s, May 10, 1973, gage height, 9.40 ft, site and datum then in use; no flow Jan. 31 to Mar. 20, Oct. 24 to Dec. 17, 1926, Mar. 1-26, 1927, Apr. 14, 1938 (all flow diverted by Gering-Fort Laramie Canal).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 287 ft<sup>3</sup>/s, June 8, gage height, 3.22 ft; maximum gage height, 3.28 ft, Oct. 15; minimum daily discharge, 28 ft<sup>3</sup>/s, Feb. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL   | AUG    | SEP  |
|-------------|-------|-------|------|------|------|------|------|------|------|-------|--------|------|
| 1           | 231   | 74    | 98   | 155  | 30   | 56   | 108  | 61   | 67   | 49    | 45     | 42   |
| 2           | 236   | 68    | 111  | 155  | 29   | 59   | 106  | 59   | 66   | 51    | 44     | 42   |
| 3           | 236   | 67    | 131  | 153  | 28   | 61   | 104  | 58   | 63   | 52    | 47     | 43   |
| 4           | 230   | 67    | 131  | 153  | 29   | 66   | 103  | 47   | 58   | 49    | 47     | 46   |
| 5           | 229   | 57    | 131  | 151  | 31   | 67   | 103  | 41   | 55   | 50    | 41     | 43   |
| 6           | 236   | 57    | 133  | 152  | 31   | 71   | 101  | 40   | 52   | 50    | 40     | 47   |
| 7           | 250   | 57    | 133  | 153  | 31   | 76   | 100  | 42   | 50   | 48    | 42     | 48   |
| 8           | 237   | 53    | 133  | 151  | 31   | 80   | 103  | 43   | 102  | 50    | 41     | 48   |
| 9           | 259   | 50    | 134  | 151  | 31   | 82   | 109  | 43   | 226  | 51    | 39     | 47   |
| 10          | 276   | 49    | 133  | 150  | 31   | 68   | 104  | 41   | 271  | 63    | 38     | 47   |
| 11          | 275   | 49    | 135  | 150  | 34   | 61   | 101  | 46   | 243  | 64    | 40     | 53   |
| 12          | 273   | 49    | 144  | 148  | 37   | 69   | 101  | 84   | 220  | 64    | 45     | 55   |
| 13          | 273   | 49    | 153  | 137  | 40   | 80   | 100  | 49   | 193  | 61    | 45     | 59   |
| 14          | 273   | 42    | 155  | 116  | 43   | 85   | 97   | 40   | 167  | 55    | 44     | 60   |
| 15          | 278   | 43    | 157  | 106  | 44   | 88   | 98   | 35   | 146  | 55    | 44     | 61   |
| 16          | 260   | 43    | 160  | 110  | 42   | 97   | 98   | 35   | 138  | 55    | 42     | 61   |
| 17          | 222   | 42    | 161  | 105  | 42   | 104  | 97   | 46   | 132  | 54    | 46     | 61   |
| 18          | 221   | 43    | 160  | 98   | 42   | 112  | 92   | 48   | 122  | 51    | 47     | 61   |
| 19          | 217   | 57    | 167  | 83   | 43   | 119  | 91   | 50   | 112  | 49    | 46     | 57   |
| 20          | 231   | 56    | 167  | 70   | 50   | 128  | 91   | 52   | 106  | 47    | 46     | 59   |
| 21          | 203   | 39    | 167  | 67   | 51   | 129  | 88   | 61   | 100  | 44    | 46     | 62   |
| 22          | 139   | 68    | 167  | 66   | 52   | 128  | 85   | 57   | 92   | 43    | 47     | 56   |
| 23          | 131   | 74    | 168  | 66   | 52   | 126  | 81   | 56   | 77   | 43    | 47     | 53   |
| 24          | 122   | 77    | 161  | 66   | 52   | 126  | 77   | 57   | 68   | 43    | 50     | 55   |
| 25          | 97    | 89    | 151  | 66   | 52   | 122  | 74   | 60   | 61   | 43    | 49     | 62   |
| 26          | 91    | 96    | 151  | 51   | 52   | 126  | 74   | 61   | 56   | 42    | 48     | 63   |
| 27          | 89    | 97    | 153  | 36   | 54   | 116  | 73   | 47   | 52   | 41    | 46     | 61   |
| 28          | 88    | 97    | 151  | 32   | 53   | 109  | 72   | 68   | 50   | 46    | 45     | 63   |
| 29          | 88    | 98    | 150  | 30   | ---  | 109  | 68   | 68   | 49   | 49    | 44     | 74   |
| 30          | 84    | 98    | 149  | 30   | ---  | 112  | 63   | 67   | 49   | 47    | 43     | 85   |
| 31          | 77    | ---   | 150  | 30   | ---  | 111  | ---  | 64   | ---  | 47    | 42     | ---  |
| TOTAL       | 6152  | 1905  | 4545 | 3187 | 1137 | 2943 | 2762 | 1626 | 3243 | 1556  | 1376   | 1674 |
| MEAN        | 198   | 63.5  | 147  | 103  | 40.6 | 94.9 | 92.1 | 52.5 | 108  | 50.2  | 44.4   | 55.8 |
| MAX         | 278   | 98    | 168  | 155  | 54   | 129  | 109  | 84   | 271  | 64    | 50     | 85   |
| MIN         | 77    | 39    | 98   | 30   | 28   | 56   | 63   | 35   | 49   | 41    | 38     | 42   |
| AC-FT       | 12200 | 3780  | 9020 | 6320 | 2260 | 5840 | 5480 | 3230 | 6430 | 3090  | 2730   | 3320 |
| CAL YR 1986 | TOTAL | 96208 |      | MEAN | 264  | MAX  | 3300 | MIN  | 39   | AC-FT | 190800 |      |
| WTR YR 1987 | TOTAL | 32106 |      | MEAN | 88.0 | MAX  | 278  | MIN  | 28   | AC-FT | 63680  |      |

## PLATTE RIVER BASIN

06670500 LARAMIE RIVER NEAR FORT LARAMIE, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to July 1986, October 1986 to September 1987.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTMEBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| MAY<br>27... | 1200 | 47                                              | 15.5                                 | <0.1                                                 | 0.02                                                 | 0.88                                                 | 0.9                                                                | 0.03                                        |
| JUN<br>24... | 1615 | 67                                              | 21.5                                 | <0.1                                                 | 0.08                                                 | 1.5                                                  | 1.6                                                                | 0.03                                        |

## 06671000 RAWHIDE CREEK NEAR LINGLE, WY

LOCATION.--Lat 42°07'32", long 104°19'36", in SE1/4 NE1/4 sec.20, T.25 N., R.62 W., Goshen County, Hydrologic Unit 10180009, on right bank 200 ft upstream from bridge on U.S. Highway 26, 1.0 mi east of Lingle, and 1.0 mi upstream from mouth.

DRAINAGE AREA.--522 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1928 to current year (no winter records since 1971). Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1440: 1932, 1936(M). WSP 1918: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,160 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1918 for history of changes prior to May 16, 1955.

REMARKS.--Estimated daily discharges: Apr. 1-2. Records good. Low flow represents return water from lands irrigated by Interstate Canal in Rawhide Creek basin. Six small reservoirs upstream from station, combined capacity, about 460 acre-ft, for irrigation. Diversions for irrigation of about 1,600 acres upstream from station.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--43 years (water years 1929-71), 21.5 ft<sup>3</sup>/s, 15,580 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,970 ft<sup>3</sup>/s, Sept. 7, 1946, gage height, 11.76 ft; no flow July 5-7, 1961, Apr. 12, 29, 1966, Mar. 20-28, 1967, Apr. 13, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 213 ft<sup>3</sup>/s, Aug. 4, gage height, 5.44 ft; minimum daily during period of operation, 1.7 ft<sup>3</sup>/s, June 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR  | MAY  | JUN   | JUL   | AUG   | SEP  |
|-------|-----|-----|-----|-----|-----|-----|------|------|-------|-------|-------|------|
| 1     |     |     |     |     |     |     | 17   | 18   | 21    | 15    | 7.8   | 36   |
| 2     |     |     |     |     |     |     | 17   | 18   | 22    | 15    | 11    | 33   |
| 3     |     |     |     |     |     |     | 17   | 18   | 22    | 15    | 13    | 34   |
| 4     |     |     |     |     |     |     | 17   | 18   | 20    | 16    | 95    | 43   |
| 5     |     |     |     |     |     |     | 17   | 17   | 16    | 16    | 40    | 56   |
| 6     |     |     |     |     |     |     | 17   | 19   | 13    | 12    | 47    | 50   |
| 7     |     |     |     |     |     |     | 17   | 27   | 12    | 8.6   | 31    | 50   |
| 8     |     |     |     |     |     |     | 16   | 26   | 29    | 12    | 36    | 49   |
| 9     |     |     |     |     |     |     | 16   | 33   | 37    | 14    | 33    | 43   |
| 10    |     |     |     |     |     |     | 16   | 34   | 42    | 16    | 33    | 38   |
| 11    |     |     |     |     |     |     | 15   | 29   | 26    | 10    | 31    | 35   |
| 12    |     |     |     |     |     |     | 16   | 13   | 19    | 11    | 31    | 33   |
| 13    |     |     |     |     |     |     | 16   | 14   | 20    | 16    | 34    | 32   |
| 14    |     |     |     |     |     |     | 16   | 13   | 17    | 13    | 32    | 34   |
| 15    |     |     |     |     |     |     | 17   | 15   | 16    | 11    | 33    | 41   |
| 16    |     |     |     |     |     |     | 16   | 15   | 14    | 8.2   | 32    | 48   |
| 17    |     |     |     |     |     |     | 17   | 17   | 18    | 10    | 28    | 49   |
| 18    |     |     |     |     |     |     | 17   | 24   | 18    | 11    | 24    | 51   |
| 19    |     |     |     |     |     |     | 17   | 16   | 16    | 11    | 19    | 51   |
| 20    |     |     |     |     |     |     | 18   | 18   | 15    | 8.6   | 19    | 49   |
| 21    |     |     |     |     |     |     | 19   | 20   | 13    | 9.6   | 20    | 52   |
| 22    |     |     |     |     |     |     | 18   | 17   | 16    | 14    | 24    | 55   |
| 23    |     |     |     |     |     |     | 18   | 11   | 9.2   | 14    | 30    | 54   |
| 24    |     |     |     |     |     |     | 18   | 13   | 2.8   | 13    | 32    | 48   |
| 25    |     |     |     |     |     |     | 18   | 17   | 7.1   | 11    | 29    | 45   |
| 26    |     |     |     |     |     |     | 18   | 19   | 8.6   | 7.8   | 31    | 40   |
| 27    |     |     |     |     |     |     | 18   | 18   | 2.8   | 6.8   | 35    | 39   |
| 28    |     |     |     |     |     |     | 18   | 17   | 1.7   | 5.5   | 35    | 45   |
| 29    |     |     |     |     |     |     | 16   | 17   | 7.1   | 8.2   | 35    | 50   |
| 30    |     |     |     |     |     |     | 18   | 21   | 8.9   | 5.8   | 32    | 60   |
| 31    |     |     |     |     |     |     | ---  | 21   | ---   | 7.1   | 36    | ---  |
| TOTAL |     |     |     |     |     |     | 511  | 593  | 490.2 | 352.2 | 968.8 | 1343 |
| MEAN  |     |     |     |     |     |     | 17.0 | 19.1 | 16.3  | 11.4  | 31.3  | 44.8 |
| MAX   |     |     |     |     |     |     | 19   | 34   | 42    | 16    | 95    | 60   |
| MIN   |     |     |     |     |     |     | 15   | 11   | 1.7   | 5.5   | 7.8   | 32   |
| AC-FT |     |     |     |     |     |     | 1010 | 1180 | 972   | 699   | 1920  | 2660 |

## PLATTE RIVER BASIN

06672500 CHERRY CREEK DRAIN NEAR TORRINGTON, WY

LOCATION.--Lat 42°02'22", long 104°10'07", in SW1/4 NW1/4 sec.23, T.24 N., R.61 W., Goshen County, Hydrologic Unit 10180009, on left bank 50 ft downstream from bridge on county road, 0.6 mi upstream from mouth, and 2.0 mi southeast of Torrington.

DRAINAGE AREA.--356 mi<sup>2</sup>.

PERIOD OF RECORD.--May to September 1931, May to September 1932, May 1935 to current year (no winter records since 1971). Monthly discharge only for some periods, published in WSP 1310.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,080 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 12, 1935, nonrecording gage at site 1.0 mi upstream at different datum. June 12, 1935, to Sept. 30, 1945, water-stage recorder at site 100 ft downstream at datum 2.00 ft higher. Oct. 1, 1945, to Nov. 27, 1950, water-stage recorder at site 100 ft downstream at present datum.

REMARKS.--Estimated daily discharges: Apr. 1-3, and Sept. 28, 29. Records fair. Flow is mainly return water from irrigation.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--36 years (water years 1936-71), 21.6 ft<sup>3</sup>/s, 15,650 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,420 ft<sup>3</sup>/s, June 27, 1955, gage height, 10.31 ft, from floodmark; minimum daily, 0.40 ft<sup>3</sup>/s, Jan. 28, 29, 1949.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 227 ft<sup>3</sup>/s, June 9, gage height, 3.17 ft; minimum daily during period of operation, 10 ft<sup>3</sup>/s, Apr. 1-4, May 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| 1     |     |     |     |     |     |     | 10   | 11   | 20   | 41   | 47   | 61   |
| 2     |     |     |     |     |     |     | 10   | 13   | 22   | 41   | 47   | 65   |
| 3     |     |     |     |     |     |     | 10   | 14   | 22   | 47   | 47   | 63   |
| 4     |     |     |     |     |     |     | 10   | 15   | 24   | 48   | 105  | 65   |
| 5     |     |     |     |     |     |     | 11   | 13   | 27   | 46   | 55   | 69   |
| 6     |     |     |     |     |     |     | 11   | 12   | 36   | 41   | 58   | 67   |
| 7     |     |     |     |     |     |     | 11   | 12   | 37   | 46   | 59   | 64   |
| 8     |     |     |     |     |     |     | 11   | 11   | 93   | 54   | 74   | 66   |
| 9     |     |     |     |     |     |     | 12   | 11   | 106  | 75   | 71   | 63   |
| 10    |     |     |     |     |     |     | 12   | 11   | 150  | 59   | 68   | 59   |
| 11    |     |     |     |     |     |     | 12   | 11   | 92   | 63   | 63   | 60   |
| 12    |     |     |     |     |     |     | 12   | 11   | 79   | 61   | 63   | 59   |
| 13    |     |     |     |     |     |     | 14   | 11   | 74   | 61   | 64   | 61   |
| 14    |     |     |     |     |     |     | 13   | 11   | 62   | 57   | 61   | 60   |
| 15    |     |     |     |     |     |     | 12   | 11   | 36   | 53   | 59   | 63   |
| 16    |     |     |     |     |     |     | 12   | 11   | 36   | 50   | 59   | 63   |
| 17    |     |     |     |     |     |     | 12   | 11   | 35   | 48   | 56   | 60   |
| 18    |     |     |     |     |     |     | 12   | 12   | 39   | 47   | 56   | 59   |
| 19    |     |     |     |     |     |     | 12   | 10   | 37   | 47   | 56   | 56   |
| 20    |     |     |     |     |     |     | 15   | 13   | 33   | 48   | 56   | 55   |
| 21    |     |     |     |     |     |     | 15   | 15   | 35   | 50   | 56   | 57   |
| 22    |     |     |     |     |     |     | 14   | 16   | 37   | 51   | 61   | 55   |
| 23    |     |     |     |     |     |     | 13   | 27   | 41   | 51   | 66   | 51   |
| 24    |     |     |     |     |     |     | 13   | 24   | 66   | 50   | 65   | 46   |
| 25    |     |     |     |     |     |     | 12   | 23   | 52   | 49   | 63   | 33   |
| 26    |     |     |     |     |     |     | 12   | 22   | 50   | 48   | 57   | 27   |
| 27    |     |     |     |     |     |     | 12   | 26   | 46   | 48   | 61   | 20   |
| 28    |     |     |     |     |     |     | 11   | 22   | 39   | 50   | 61   | 18   |
| 29    |     |     |     |     |     |     | 11   | 20   | 43   | 49   | 63   | 14   |
| 30    |     |     |     |     |     |     | 11   | 22   | 37   | 49   | 61   | 12   |
| 31    |     |     |     |     |     |     | ---  | 20   | ---  | 48   | 60   | ---  |
| TOTAL |     |     |     |     |     |     | 358  | 472  | 1506 | 1576 | 1898 | 1571 |
| MEAN  |     |     |     |     |     |     | 11.9 | 15.2 | 50.2 | 50.8 | 61.2 | 52.4 |
| MAX   |     |     |     |     |     |     | 15   | 27   | 150  | 75   | 105  | 69   |
| MIN   |     |     |     |     |     |     | 10   | 10   | 20   | 41   | 47   | 12   |
| AC-FT |     |     |     |     |     |     | 710  | 936  | 2990 | 3130 | 3760 | 3120 |

06673500 KATZER DRAIN NEAR HENRY, NE

LOCATION.--Lat 41°58'45", long 104°04'15", in NW1/4 NW1/4 SW1/4 sec.10, T.23 N., R.60 W., Goshen County, WY, Hydrologic Unit 10180009, on left bank 0.2 mi upstream from bridge on county road, 0.8 mi upstream from mouth, and 1.7 mi southwest of Henry.

DRAINAGE AREA.--45.9 mi<sup>2</sup>, of which 8.2 mi<sup>2</sup> is probably noncontributing.

PERIOD OF RECORD.--May 1928 to current year (no winter records prior to 1932 and since 1971).

REVISED RECORDS.--WSP 1710: Drainage area. WDR WY-77-1: 1975(M), 1976(M).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,040 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1918 for history of changes prior to Dec. 1, 1950. Dec. 1, 1950, to Sept. 30, 1969, at site 1.0 mi upstream at different datum. Oct. 1, 1969, to Mar. 31, 1974, at site 0.2 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Apr. 1-28 and Sept. 21-24. Records good except those for estimated daily discharges, which are poor. Flow is mainly return water from land irrigated by Fort Laramie Canal.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--40 years (water years 1932-71), 19.6 ft<sup>3</sup>/s, 14,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,460 ft<sup>3</sup>/s, June 11, 1977, gage height, 8.56 ft, from rating curve extended above 130 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow; minimum daily, 0.50 ft<sup>3</sup>/s, Jan. 14, 1937.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 461 ft<sup>3</sup>/s, May 23, gage height, 4.21 ft; minimum daily during period of operation, 7.7 ft<sup>3</sup>/s, May 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR   | MAY   | JUN  | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|-------|-------|------|------|------|------|
| 1     |     |     |     |     |     |     | 10    | 8.1   | 52   | 50   | 61   | 59   |
| 2     |     |     |     |     |     |     | 10    | 7.7   | 46   | 51   | 61   | 54   |
| 3     |     |     |     |     |     |     | 10    | 13    | 45   | 47   | 61   | 57   |
| 4     |     |     |     |     |     |     | 10    | 22    | 48   | 43   | 146  | 68   |
| 5     |     |     |     |     |     |     | 10    | 12    | 45   | 52   | 101  | 101  |
| 6     |     |     |     |     |     |     | 10    | 10    | 37   | 59   | 91   | 86   |
| 7     |     |     |     |     |     |     | 10    | 9.6   | 35   | 58   | 89   | 78   |
| 8     |     |     |     |     |     |     | 10    | 9.6   | 49   | 80   | 97   | 59   |
| 9     |     |     |     |     |     |     | 11    | 9.2   | 70   | 69   | 95   | 56   |
| 10    |     |     |     |     |     |     | 11    | 8.9   | 78   | 62   | 99   | 52   |
| 11    |     |     |     |     |     |     | 12    | 8.9   | 37   | 71   | 86   | 48   |
| 12    |     |     |     |     |     |     | 12    | 11    | 30   | 78   | 86   | 51   |
| 13    |     |     |     |     |     |     | 13    | 12    | 35   | 82   | 95   | 48   |
| 14    |     |     |     |     |     |     | 13    | 9.2   | 35   | 72   | 99   | 44   |
| 15    |     |     |     |     |     |     | 12    | 8.5   | 36   | 75   | 96   | 36   |
| 16    |     |     |     |     |     |     | 12    | 8.5   | 37   | 70   | 96   | 32   |
| 17    |     |     |     |     |     |     | 12    | 8.9   | 36   | 71   | 93   | 32   |
| 18    |     |     |     |     |     |     | 12    | 8.9   | 34   | 71   | 86   | 32   |
| 19    |     |     |     |     |     |     | 13    | 8.5   | 35   | 69   | 79   | 32   |
| 20    |     |     |     |     |     |     | 13    | 13    | 37   | 71   | 76   | 30   |
| 21    |     |     |     |     |     |     | 12    | 19    | 37   | 70   | 76   | 35   |
| 22    |     |     |     |     |     |     | 11    | 10    | 39   | 66   | 86   | 33   |
| 23    |     |     |     |     |     |     | 11    | 70    | 43   | 66   | 96   | 31   |
| 24    |     |     |     |     |     |     | 11    | 18    | 48   | 66   | 97   | 28   |
| 25    |     |     |     |     |     |     | 10    | 13    | 51   | 66   | 96   | 15   |
| 26    |     |     |     |     |     |     | 10    | 12    | 43   | 64   | 92   | 11   |
| 27    |     |     |     |     |     |     | 10    | 12    | 38   | 65   | 88   | 10   |
| 28    |     |     |     |     |     |     | 10    | 12    | 39   | 60   | 86   | 10   |
| 29    |     |     |     |     |     |     | 9.6   | 33    | 44   | 61   | 79   | 10   |
| 30    |     |     |     |     |     |     | 8.5   | 61    | 46   | 60   | 76   | 10   |
| 31    |     |     |     |     |     |     | ---   | 60    | ---  | 60   | 72   | ---  |
| TOTAL |     |     |     |     |     |     | 329.1 | 527.5 | 1285 | 2005 | 2737 | 1248 |
| MEAN  |     |     |     |     |     |     | 11.0  | 17.0  | 42.8 | 64.7 | 88.3 | 41.6 |
| MAX   |     |     |     |     |     |     | 13    | 70    | 78   | 82   | 146  | 101  |
| MIN   |     |     |     |     |     |     | 8.5   | 7.7   | 30   | 43   | 61   | 10   |
| AC-FT |     |     |     |     |     |     | 653   | 1050  | 2550 | 3980 | 5430 | 2480 |



## PLATTE RIVER BASIN

06674500 NORTH PLATTE RIVER AT WYOMING-NEBRASKA STATE LINE

LOCATION.--Lat 41°59'25", long 104°02'57", in SW1/4 NE1/4 SE1/4 sec.4, T.23 N., R.58 W., Scottsbluff County, NE, Hydrologic Unit 10180009, on right bank 650 ft upstream from bridge on NE State Highway 86, 700 ft downstream from Wyoming-Nebraska State line, and 0.5 mi south of Henry, NE.

DRAINAGE AREA.--22,218 mi<sup>2</sup>, of which 1,929 mi<sup>2</sup> is probably noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1929 to current year.

REVISED RECORDS.--WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,021.35 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 6, 1929, nonrecording gage and Nov. 6, 1929, to Sept. 30, 1959, water-stage recorder at site 0.5 mi upstream at datum 4.42 ft higher. Oct. 7, 1959 to Feb. 22, 1972, water-stage recorder at site 0.5 mi upstream at datum 3.42 ft higher.

REMARKS.--Estimated daily discharges: Dec. 22 to Jan. 7. Records fair except those for estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs, transbasin diversions, power development, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. Gering-Mitchell Canal diverts from right bank 0.8 mi upstream. U.S. Corps of Engineers satellite telemeter at station.

COOPERATION.--Five discharge measurements provided by the Wyoming State Engineer's Office.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 17,900 ft<sup>3</sup>/s, June 2, 1929, gage height, 7.04 ft, site and datum then in use; minimum daily, 13 ft<sup>3</sup>/s, May 12, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,040 ft<sup>3</sup>/s, Aug. 4, gage height, 3.66 ft; minimum daily, 228 ft<sup>3</sup>/s, Feb. 22-25, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT    | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG     | SEP   |
|-------------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-------|
| 1           | 1480   | 1510   | 1520  | 468   | 259   | 229   | 260   | 793   | 460   | 1310  | 1330    | 858   |
| 2           | 1550   | 1510   | 1510  | 463   | 259   | 232   | 257   | 665   | 451   | 1280  | 1330    | 821   |
| 3           | 1680   | 1480   | 1500  | 456   | 255   | 235   | 254   | 788   | 462   | 1310  | 1310    | 822   |
| 4           | 1660   | 1490   | 1490  | 450   | 252   | 239   | 251   | 733   | 535   | 1330  | 1710    | 838   |
| 5           | 1670   | 1460   | 1460  | 444   | 249   | 239   | 250   | 646   | 513   | 1350  | 1390    | 874   |
| 6           | 1700   | 1450   | 1240  | 440   | 246   | 238   | 248   | 595   | 484   | 1320  | 946     | 846   |
| 7           | 1710   | 1480   | 911   | 430   | 243   | 236   | 246   | 552   | 462   | 1300  | 772     | 818   |
| 8           | 1710   | 1460   | 817   | 422   | 244   | 240   | 294   | 527   | 633   | 1340  | 764     | 785   |
| 9           | 1800   | 1450   | 735   | 404   | 243   | 244   | 387   | 533   | 633   | 1370  | 657     | 771   |
| 10          | 1770   | 1430   | 669   | 392   | 236   | 244   | 410   | 625   | 794   | 1330  | 578     | 717   |
| 11          | 1800   | 1420   | 647   | 392   | 239   | 245   | 441   | 646   | 706   | 1290  | 495     | 714   |
| 12          | 1770   | 1410   | 646   | 388   | 236   | 243   | 527   | 519   | 645   | 1340  | 448     | 803   |
| 13          | 1790   | 1400   | 635   | 384   | 236   | 246   | 575   | 487   | 619   | 1360  | 454     | 844   |
| 14          | 1760   | 1440   | 630   | 379   | 243   | 250   | 680   | 456   | 605   | 1320  | 560     | 847   |
| 15          | 1740   | 1420   | 624   | 359   | 246   | 248   | 769   | 574   | 562   | 1260  | 730     | 857   |
| 16          | 1740   | 1440   | 613   | 344   | 246   | 254   | 711   | 541   | 527   | 1230  | 1100    | 864   |
| 17          | 1720   | 1430   | 602   | 340   | 243   | 258   | 680   | 637   | 553   | 1230  | 1300    | 877   |
| 18          | 1690   | 1430   | 592   | 336   | 240   | 261   | 700   | 721   | 695   | 1280  | 1340    | 896   |
| 19          | 1690   | 1430   | 586   | 336   | 238   | 266   | 734   | 740   | 765   | 1310  | 1250    | 892   |
| 20          | 1700   | 1440   | 576   | 327   | 232   | 276   | 787   | 748   | 800   | 1320  | 1190    | 890   |
| 21          | 1710   | 1430   | 570   | 314   | 230   | 276   | 883   | 729   | 871   | 1320  | 1150    | 910   |
| 22          | 1740   | 1420   | 555   | 306   | 228   | 285   | 1090  | 701   | 943   | 1320  | 1140    | 934   |
| 23          | 1690   | 1440   | 545   | 303   | 228   | 284   | 1320  | 708   | 1030  | 1330  | 1180    | 962   |
| 24          | 1630   | 1470   | 530   | 299   | 228   | 281   | 1390  | 660   | 1150  | 1340  | 1170    | 831   |
| 25          | 1590   | 1470   | 522   | 296   | 228   | 276   | 1490  | 606   | 1250  | 1360  | 1140    | 643   |
| 26          | 1550   | 1470   | 515   | 292   | 230   | 273   | 1630  | 506   | 1240  | 1330  | 1030    | 553   |
| 27          | 1530   | 1470   | 507   | 285   | 228   | 276   | 1610  | 465   | 1260  | 1330  | 918     | 496   |
| 28          | 1530   | 1470   | 492   | 278   | 229   | 269   | 1490  | 468   | 1170  | 1310  | 889     | 457   |
| 29          | 1520   | 1480   | 490   | 275   | ---   | 262   | 1310  | 479   | 1230  | 1320  | 885     | 447   |
| 30          | 1520   | 1520   | 487   | 265   | ---   | 260   | 1020  | 495   | 1340  | 1330  | 881     | 541   |
| 31          | 1520   | ---    | 480   | 262   | ---   | 260   | ---   | 474   | ---   | 1320  | 881     | ---   |
| TOTAL       | 51660  | 43620  | 23696 | 11129 | 6714  | 7925  | 22694 | 18817 | 23388 | 40790 | 30918   | 23408 |
| MEAN        | 1666   | 1454   | 764   | 359   | 240   | 256   | 756   | 607   | 780   | 1316  | 997     | 780   |
| MAX         | 1800   | 1520   | 1520  | 468   | 259   | 285   | 1630  | 793   | 1340  | 1370  | 1710    | 962   |
| MIN         | 1480   | 1400   | 480   | 262   | 228   | 229   | 246   | 456   | 451   | 1230  | 448     | 447   |
| AC-FT       | 102500 | 86520  | 47000 | 22070 | 13320 | 15720 | 45010 | 37320 | 46390 | 80910 | 61330   | 46430 |
| CAL YR 1986 | TOTAL  | 615476 |       | MEAN  | 1686  | MAX   | 6170  | MIN   | 212   | AC-FT | 1221000 |       |
| WTR YR 1987 | TOTAL  | 304759 |       | MEAN  | 835   | MAX   | 1800  | MIN   | 228   | AC-FT | 604500  |       |

06674500 NORTH PLATTE RIVER AT WYOMING-NEBRASKA STATE LINE--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| OCT<br>29... | 0900 | 1530                                            | 730                                               | 8.4                            | 10.0                                 | 660                                            | 8.9                                 | 91                                                             | K24                                                            |
| JAN<br>08... | 1245 | 424                                             | 890                                               | 8.2                            | 4.0                                  | 654                                            | 11.2                                | 100                                                            | 24                                                             |
| APR<br>01... | 1700 | 263                                             | 945                                               | 7.8                            | 7.0                                  | 660                                            | 11.6                                | 111                                                            | K9                                                             |
| MAY<br>27... | 1445 | 441                                             | 820                                               | --                             | 17.5                                 | --                                             | --                                  | --                                                             | --                                                             |
| JUN<br>25... | 0700 | 1230                                            | 840                                               | --                             | 16.0                                 | --                                             | --                                  | --                                                             | --                                                             |
| JUL<br>21... | 1430 | 1340                                            | 800                                               | 8.3                            | 24.0                                 | 650                                            | 6.8                                 | 95                                                             | 130                                                            |
| AUG<br>26... | 1100 | 1050                                            | 750                                               | --                             | 18.0                                 | --                                             | --                                  | --                                                             | --                                                             |
| SEP<br>30... | 1545 | 573                                             | 885                                               | --                             | 16.0                                 | --                                             | --                                  | --                                                             | --                                                             |

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

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| MAY<br>27... | 1445 | 441                                             | 820                                               | 17.5                                 | 0.8                                                  | 0.04                                                 | 0.56                                                 | 0.6                                                                | 0.07                                        |
| JUN<br>24... | 2030 | 1190                                            | --                                                | 20.5                                 | 0.3                                                  | 0.03                                                 | 2.1                                                  | 2.1                                                                | 0.18                                        |

## PLATTE RIVER BASIN

06679500 NORTH PLATTE RIVER AT MITCHELL, NE

LOCATION.--Lat 41°55'38", long 103°48'48", in NE1/4 NE1/4 sec.33, T.23 N., R.56 W., Scotts Bluff County, Hydrologic Unit 10180009, on right bank of main channel 10 ft downstream from bridge on State Highway 29, 0.5 mi south of Mitchell.

DRAINAGE AREA.--24,300 mi<sup>2</sup> approximately, of which about 22,300 mi<sup>2</sup> contributes directly to surface runoff.

PERIOD OF RECORD.--June 1901 to September 1910, May to December 1911, February 1912 to July 1913 (gage heights only), May 1916 to October 1918 (irrigation seasons only), May 1920 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WDR NE-67, WDR NE-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,929.3 ft above National Geodetic Vertical Datum of 1929. See WSP 1918 for history of changes prior to May 27, 1960. May 27, 1960, to Aug. 24, 1971, at datum 1.00 ft higher.

REMARKS.--Estimated daily discharges: April 23-29. Records good except for period of estimated record, which is fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE (since Glendo project).--30 years (water years 1958-87), 886 ft<sup>3</sup>/s, 641,900 acre-ft/yr; median of yearly mean discharges, 546 ft<sup>3</sup>/s, 396,000 acre-ft/yr. Figures are unadjusted for storage or diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,500 ft<sup>3</sup>/s, June 3, 1909, gage height, 6.45 ft, datum then in use, from graph based on gage readings, from rating curve extended above 17,000 ft<sup>3</sup>/s; maximum gage height, 7.80 ft, May 29, 1984; minimum daily discharge observed, 25 ft<sup>3</sup>/s, Sept. 25-29, 1908.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,480 ft<sup>3</sup>/s, Aug. 5, gage height, 4.25 ft; minimum daily, 273 ft<sup>3</sup>/s, May 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT    | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 2090   | 1950   | 1790  | 731   | 560   | 452   | 636   | 1230  | 618   | 563   | 349   | 537   |
| 2     | 2110   | 1960   | 1790  | 737   | 554   | 455   | 642   | 1060  | 547   | 484   | 356   | 551   |
| 3     | 2330   | 1950   | 1790  | 734   | 544   | 464   | 646   | 1060  | 530   | 379   | 349   | 535   |
| 4     | 2370   | 1960   | 1790  | 735   | 532   | 498   | 629   | 1170  | 548   | 384   | 1630  | 513   |
| 5     | 2320   | 1970   | 1810  | 732   | 530   | 512   | 623   | 1060  | 563   | 512   | 2190  | 594   |
| 6     | 2340   | 1940   | 1710  | 731   | 520   | 508   | 616   | 855   | 531   | 484   | 1680  | 668   |
| 7     | 2320   | 1940   | 1360  | 721   | 516   | 504   | 611   | 568   | 488   | 394   | 1460  | 687   |
| 8     | 2300   | 1930   | 1190  | 712   | 509   | 500   | 618   | 490   | 1040  | 490   | 1470  | 670   |
| 9     | 2330   | 1870   | 1080  | 693   | 507   | 494   | 694   | 432   | 850   | 518   | 1370  | 662   |
| 10    | 2310   | 1870   | 990   | 678   | 506   | 492   | 744   | 443   | 1220  | 512   | 1250  | 626   |
| 11    | 2320   | 1840   | 939   | 691   | 497   | 500   | 746   | 478   | 1040  | 463   | 891   | 559   |
| 12    | 2320   | 1800   | 911   | 695   | 490   | 510   | 810   | 426   | 904   | 425   | 702   | 610   |
| 13    | 2360   | 1790   | 890   | 679   | 490   | 529   | 890   | 440   | 820   | 518   | 580   | 673   |
| 14    | 2360   | 1790   | 876   | 667   | 491   | 541   | 960   | 350   | 767   | 568   | 511   | 717   |
| 15    | 2330   | 1800   | 862   | 640   | 501   | 529   | 1120  | 322   | 712   | 518   | 466   | 760   |
| 16    | 2340   | 1800   | 848   | 605   | 496   | 544   | 1140  | 300   | 598   | 445   | 470   | 816   |
| 17    | 2330   | 1820   | 834   | 604   | 485   | 551   | 1100  | 273   | 614   | 394   | 466   | 864   |
| 18    | 2280   | 1790   | 814   | 610   | 476   | 551   | 1120  | 299   | 613   | 380   | 550   | 910   |
| 19    | 2250   | 1800   | 814   | 605   | 465   | 589   | 1150  | 306   | 592   | 390   | 593   | 924   |
| 20    | 2250   | 1790   | 792   | 593   | 463   | 649   | 1170  | 464   | 547   | 404   | 512   | 926   |
| 21    | 2260   | 1800   | 788   | 581   | 458   | 653   | 1240  | 553   | 538   | 393   | 491   | 944   |
| 22    | 2300   | 1770   | 786   | 583   | 462   | 687   | 1390  | 643   | 551   | 374   | 449   | 1030  |
| 23    | 2290   | 1750   | 785   | 583   | 463   | 675   | 1700  | 754   | 526   | 356   | 484   | 1110  |
| 24    | 2190   | 1780   | 781   | 583   | 452   | 671   | 1750  | 1110  | 586   | 361   | 564   | 1060  |
| 25    | 2160   | 1750   | 772   | 579   | 447   | 660   | 1800  | 1120  | 616   | 386   | 613   | 819   |
| 26    | 2090   | 1750   | 761   | 577   | 454   | 659   | 1850  | 884   | 658   | 389   | 627   | 723   |
| 27    | 2050   | 1760   | 748   | 575   | 445   | 655   | 1950  | 811   | 646   | 387   | 551   | 727   |
| 28    | 2020   | 1740   | 747   | 567   | 461   | 640   | 1990  | 699   | 634   | 385   | 542   | 845   |
| 29    | 1990   | 1750   | 738   | 567   | ---   | 627   | 1720  | 644   | 592   | 361   | 550   | 900   |
| 30    | 1980   | 1770   | 741   | 561   | ---   | 622   | 1560  | 682   | 604   | 361   | 549   | 928   |
| 31    | 1980   | ---    | 740   | 565   | ---   | 634   | ---   | 674   | ---   | 346   | 536   | ---   |
| TOTAL | 69270  | 54980  | 32267 | 19914 | 13774 | 17555 | 33615 | 20600 | 20093 | 13324 | 23801 | 22888 |
| MEAN  | 2235   | 1833   | 1041  | 642   | 492   | 566   | 1120  | 665   | 670   | 430   | 768   | 763   |
| MAX   | 2370   | 1970   | 1810  | 737   | 560   | 687   | 1990  | 1230  | 1220  | 568   | 2190  | 1110  |
| MIN   | 1980   | 1740   | 738   | 561   | 445   | 452   | 611   | 273   | 488   | 346   | 349   | 513   |
| AC-FT | 137400 | 109100 | 64000 | 39500 | 27320 | 34820 | 66680 | 40860 | 39850 | 26430 | 47210 | 45400 |

CAL YR 1986 TOTAL 671511 MEAN 1840 MAX 6120 MIN 447 AC-FT 1332000  
WTR YR 1987 TOTAL 342081 MEAN 937 MAX 2370 MIN 273 AC-FT 678500

## 06755800 CROW CREEK AT ROUNDTOP ROAD, NEAR CHEYENNE, WY

LOCATION.--Lat 41°09'30", long 104°52'44", in SW1/4 NE1/4 NW1/4 sec.27, T.14 N., R.67 W., Laramie County, Hydrologic Unit 10190009, at west edge of F. E. Warren AFB, at bridge on Roundtop Road, 1.1 mi upstream from Diamond Creek, and 3 mi northwest of Cheyenne.

DRAINAGE AREA.--2,486 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1986 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| MAY<br>27... | 0900 | 4.5                                             | 11.0                                 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUN<br>16... | 0900 | 0.44                                            | 17.0                                 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>17... | 1300 | 0.17                                            | 22.0                                 | <0.01                                                           | --                                                           | --                        | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>20... | 1000 | 0.10                                            | 18.0                                 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## 06755950 CROW CREEK AT F.E. WARREN AFB, WY

LOCATION.--Lat 41°08'02", long 104°50'25", in NE1/4 NW1/4 SW1/4 sec.36, T.14 N., R.67 W., Laramie County, Hydrologic Unit 10190009, 1,400 ft upstream from bridge on U.S. Interstate 25, 0.2 mi southeast of Gate No. 1 of F.E. Warren AFB, and 2 mi downstream from mouth of Diamond Creek.

REMARKS.--Streamflow measured at 9th street bridge in Cheyenne.

PERIOD OF RECORD.--Water years 1983 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| MAY<br>12... | 1400 | 4.0                                             | 20.0                                 | <0.01                                                           | 0.08                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUN<br>16... | 0800 | 3.3                                             | 17.0                                 | <0.01                                                           | 0.34                                                         | 0.04                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>17... | 1400 | 1.1                                             | 23.0                                 | <0.01                                                           | --                                                           | --                        | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>20... | 1100 | 1.0                                             | 18.0                                 | <0.01                                                           | 0.21                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>16... | 0930 | 1.7                                             | 12.0                                 | <0.01                                                           | 0.16                                                         | 0.01                      | <0.01                      | <0.01                      | <0.01                      |

## PLATTE RIVER BASIN

06756000 CROW CREEK NEAR CHEYENNE, WY

LOCATION.--Lat 41°07'09", long 104°45'33", in NW1/4 SW1/4 SE1/4 sec.3, T. 13 N., R.66 W., Laramie County, Hydrologic Unit 10190009, 400 ft downstream from Cheyenne Sewage Disposal Plant outlet, 1.3 mi upstream from Wyoming Hereford Ranch Reservoir No. 1, and 3.4 mi southwest of State Capitol Building in Cheyenne.

DRAINAGE AREA.--297 mi<sup>2</sup>.

REMARKS.--Streamflow measured at 9th Street bridge in Cheyenne, and sample collected 1.7 mi upstream on College Drive.

PERIOD OF RECORD.--Water years 1983 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| MAY<br>12... | 1530 | 4.0                                             | 20.0                                 | --                                                              | 0.04                                                         | --                        | <0.01                      | <0.01                      | <0.01                      |
| JUN<br>16... | 1100 | 3.3                                             | 20.0                                 | <0.01                                                           | 0.13                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>17... | 1430 | 1.1                                             | 24.0                                 | <0.01                                                           | --                                                           | --                        | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>20... | 1130 | 1.0                                             | 18.0                                 | <0.10                                                           | 0.10                                                         | <0.10                     | <0.10                      | <0.10                      | <0.10                      |
| SEP<br>16... | 1100 | 1.7                                             | 12.0                                 | 0.19                                                            | 0.05                                                         | 0.20                      | <0.01                      | <0.01                      | <0.01                      |

## GREEN RIVER BASIN

09188500 GREEN RIVER AT WARREN BRIDGE, NEAR DANIEL, WY

LOCATION.--Lat 43°01'08", long 110°07'03", in SE1/4 SE1/4 NE1/4 sec.8, T.35 N., R.111 W., Sublette County, Hydrologic Unit 14040101, on right bank 100 ft upstream from bridge on U.S. Highways 189 and 191, 3.4 mi upstream from Beaver Creek, and 12 mi north of Daniel.

DRAINAGE AREA.--468 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1931 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 979: 1932(M).

GAGE.--Water-stage recorder. Datum of gage is 7,468.09 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 6, 1977, on left bank at same datum.

REMARKS.--Estimated daily discharges: Nov. 8 to Apr. 19 and July 24-26. Records good except those for November to April, which are poor. Diversions upstream from station for irrigation of about 10,200 acres, of which about 6,100 acres are downstream from station.

AVERAGE DISCHARGE.--56 years, 513 ft<sup>3</sup>/s, 371,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,490 ft<sup>3</sup>/s, June 6, 1986, gage height, 5.65 ft; maximum gage height, 5.77 ft, June 9, 1972; minimum discharge recorded, 31 ft<sup>3</sup>/s, Nov. 26, 1933, gage height, 0.70 ft, from rating curve extended below 120 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,870 ft<sup>3</sup>/s, May 19, gage height, 3.92 ft; maximum gage height, 4.70 ft, Jan. 18 (backwater from ice); minimum daily discharge, 90 ft<sup>3</sup>/s, Jan. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR   | APR   | MAY   | JUN   | JUL   | AUG    | SEP   |
|-------------|-------|--------|------|------|------|-------|-------|-------|-------|-------|--------|-------|
| 1           | 249   | 232    | 180  | 100  | 150  | 130   | 200   | 1280  | 841   | 813   | 647    | 405   |
| 2           | 257   | 212    | 190  | 100  | 150  | 140   | 230   | 1260  | 770   | 759   | 619    | 378   |
| 3           | 259   | 215    | 170  | 110  | 140  | 140   | 260   | 997   | 669   | 729   | 574    | 368   |
| 4           | 250   | 217    | 150  | 110  | 130  | 150   | 310   | 799   | 593   | 700   | 535    | 385   |
| 5           | 241   | 209    | 160  | 120  | 140  | 160   | 350   | 739   | 648   | 644   | 493    | 404   |
| 6           | 235   | 211    | 150  | 120  | 140  | 170   | 360   | 792   | 762   | 597   | 462    | 408   |
| 7           | 229   | 215    | 140  | 120  | 150  | 180   | 360   | 873   | 972   | 559   | 434    | 398   |
| 8           | 224   | 130    | 130  | 110  | 140  | 190   | 340   | 986   | 1180  | 541   | 413    | 368   |
| 9           | 224   | 96     | 130  | 100  | 140  | 200   | 290   | 1060  | 1340  | 500   | 405    | 342   |
| 10          | 222   | 110    | 120  | 96   | 140  | 190   | 260   | 1140  | 1610  | 547   | 389    | 323   |
| 11          | 231   | 120    | 110  | 100  | 140  | 180   | 260   | 1210  | 1640  | 887   | 378    | 305   |
| 12          | 217   | 130    | 140  | 96   | 140  | 180   | 250   | 1250  | 1510  | 1080  | 375    | 297   |
| 13          | 211   | 150    | 150  | 100  | 130  | 190   | 240   | 1230  | 1400  | 921   | 370    | 281   |
| 14          | 215   | 160    | 140  | 110  | 130  | 190   | 300   | 1230  | 1420  | 722   | 399    | 275   |
| 15          | 208   | 160    | 140  | 100  | 130  | 170   | 350   | 1240  | 1440  | 630   | 534    | 266   |
| 16          | 204   | 170    | 140  | 95   | 130  | 180   | 450   | 1290  | 1500  | 578   | 575    | 257   |
| 17          | 201   | 180    | 144  | 90   | 130  | 190   | 600   | 1500  | 1520  | 685   | 552    | 251   |
| 18          | 202   | 180    | 130  | 96   | 130  | 200   | 1000  | 1750  | 1420  | 854   | 501    | 247   |
| 19          | 226   | 180    | 140  | 105  | 120  | 190   | 900   | 1840  | 1140  | 1080  | 463    | 244   |
| 20          | 238   | 180    | 150  | 100  | 120  | 180   | 517   | 1620  | 974   | 1070  | 434    | 237   |
| 21          | 254   | 190    | 140  | 100  | 120  | 170   | 493   | 1470  | 870   | 821   | 419    | 229   |
| 22          | 249   | 200    | 130  | 110  | 130  | 170   | 634   | 1330  | 854   | 767   | 426    | 220   |
| 23          | 236   | 210    | 130  | 110  | 120  | 170   | 766   | 1120  | 862   | 956   | 436    | 213   |
| 24          | 227   | 220    | 130  | 120  | 120  | 170   | 853   | 951   | 790   | 920   | 455    | 211   |
| 25          | 218   | 220    | 130  | 130  | 120  | 170   | 888   | 893   | 685   | 820   | 582    | 207   |
| 26          | 211   | 230    | 120  | 140  | 120  | 170   | 983   | 836   | 637   | 750   | 715    | 205   |
| 27          | 208   | 200    | 120  | 147  | 130  | 170   | 1070  | 820   | 685   | 674   | 718    | 200   |
| 28          | 206   | 180    | 120  | 150  | 130  | 180   | 1140  | 916   | 714   | 646   | 651    | 198   |
| 29          | 206   | 190    | 120  | 150  | ---  | 170   | 1190  | 1050  | 767   | 636   | 554    | 195   |
| 30          | 205   | 190    | 110  | 160  | ---  | 170   | 1210  | 1040  | 805   | 623   | 485    | 192   |
| 31          | 244   | ---    | 110  | 160  | ---  | 180   | ---   | 893   | ---   | 644   | 435    | ---   |
| TOTAL       | 7007  | 5487   | 4264 | 3555 | 3710 | 5390  | 17054 | 35405 | 31018 | 23153 | 15428  | 8509  |
| MEAN        | 226   | 183    | 138  | 115  | 133  | 174   | 568   | 1142  | 1034  | 747   | 498    | 284   |
| MAX         | 259   | 232    | 190  | 160  | 150  | 200   | 1210  | 1840  | 1640  | 1080  | 718    | 408   |
| MIN         | 201   | 96     | 110  | 90   | 120  | 130   | 200   | 739   | 593   | 500   | 370    | 192   |
| AC-FT       | 13900 | 10880  | 8460 | 7050 | 7360 | 10690 | 33830 | 70230 | 61520 | 45920 | 30600  | 16880 |
| CAL YR 1986 | TOTAL | 279124 |      | MEAN | 765  | MAX   | 5450  | MIN   | 94    | AC-FT | 553600 |       |
| WTR YR 1987 | TOTAL | 159980 |      | MEAN | 438  | MAX   | 1840  | MIN   | 90    | AC-FT | 317300 |       |



## 09196500 PINE CREEK ABOVE FREMONT LAKE, WY

LOCATION.--Lat 43°01'50", long 109°46'10", in S1/2 sec.5, T.35 N., R.108 W., Sublette County, Hydrologic Unit 14040102, Bridger National Forest, on right bank 0.5 mi upstream from Fremont Lake, 0.5 mi downstream from Fremont Creek, and 12 mi northeast of Pinedale.

DRAINAGE AREA.--75.8 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1443: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 7,450 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 1-4, 10, Jan. 9-11, Feb. 4-6, 17, 18, 20, and Mar. 21-26, 28-30. Records good. No diversion upstream from station.

AVERAGE DISCHARGE.--33 years, 181 ft<sup>3</sup>/s, 131,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,550 ft<sup>3</sup>/s, June 16, 1959, gage height, 7.15 ft; maximum gage height, 7.65 ft, June 6, 1986; minimum daily discharge, 3.3 ft<sup>3</sup>/s, Apr. 4, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| May 18  | 2000 | 1,200                             | 6.33                | July 11 | 0800 | 1,050                             | 6.04                |
| June 10 | 0500 | *1,430                            | *6.75               | July 18 | 2400 | 844                               | 5.57                |

Minimum daily discharge, 11 ft<sup>3</sup>/s, Mar. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|-------|------|------|------|------|------|-------|-------|-------|--------|------|
| 1           | 56    | 50    | 35   | 15   | 16   | 15   | 13   | 403   | 375   | 312   | 201    | 128  |
| 2           | 57    | 47    | 35   | 15   | 16   | 14   | 13   | 394   | 331   | 272   | 189    | 120  |
| 3           | 55    | 47    | 34   | 15   | 16   | 14   | 14   | 340   | 308   | 249   | 179    | 116  |
| 4           | 53    | 44    | 32   | 16   | 16   | 14   | 15   | 299   | 344   | 232   | 168    | 125  |
| 5           | 53    | 43    | 31   | 16   | 15   | 14   | 16   | 314   | 470   | 216   | 159    | 127  |
| 6           | 53    | 43    | 30   | 17   | 16   | 14   | 19   | 390   | 604   | 202   | 150    | 126  |
| 7           | 55    | 45    | 30   | 17   | 16   | 14   | 20   | 523   | 738   | 193   | 142    | 124  |
| 8           | 57    | 43    | 29   | 18   | 16   | 14   | 21   | 659   | 840   | 187   | 136    | 122  |
| 9           | 59    | 42    | 26   | 18   | 16   | 14   | 20   | 716   | 1110  | 182   | 130    | 119  |
| 10          | 60    | 42    | 25   | 18   | 16   | 14   | 20   | 737   | 1340  | 350   | 125    | 114  |
| 11          | 62    | 42    | 25   | 17   | 16   | 14   | 21   | 881   | 1080  | 964   | 120    | 109  |
| 12          | 59    | 41    | 25   | 17   | 16   | 14   | 21   | 823   | 913   | 653   | 113    | 104  |
| 13          | 58    | 39    | 24   | 17   | 15   | 14   | 21   | 793   | 950   | 420   | 108    | 100  |
| 14          | 56    | 38    | 24   | 16   | 16   | 13   | 22   | 701   | 939   | 316   | 117    | 95   |
| 15          | 55    | 38    | 23   | 16   | 16   | 13   | 27   | 804   | 887   | 265   | 144    | 91   |
| 16          | 53    | 38    | 21   | 17   | 16   | 13   | 34   | 806   | 943   | 241   | 157    | 88   |
| 17          | 51    | 42    | 20   | 19   | 15   | 13   | 44   | 930   | 801   | 262   | 166    | 83   |
| 18          | 51    | 47    | 21   | 19   | 15   | 14   | 57   | 1090  | 602   | 578   | 167    | 79   |
| 19          | 53    | 49    | 21   | 18   | 15   | 14   | 60   | 935   | 493   | 726   | 163    | 75   |
| 20          | 55    | 47    | 20   | 17   | 15   | 14   | 58   | 713   | 432   | 450   | 156    | 71   |
| 21          | 55    | 45    | 19   | 18   | 15   | 14   | 58   | 667   | 409   | 337   | 150    | 66   |
| 22          | 56    | 44    | 18   | 18   | 15   | 14   | 73   | 552   | 412   | 551   | 146    | 62   |
| 23          | 56    | 46    | 18   | 17   | 15   | 14   | 106  | 426   | 385   | 579   | 140    | 58   |
| 24          | 55    | 42    | 17   | 16   | 15   | 13   | 133  | 370   | 317   | 424   | 142    | 54   |
| 25          | 55    | 41    | 17   | 16   | 16   | 12   | 153  | 339   | 280   | 314   | 155    | 51   |
| 26          | 55    | 42    | 17   | 16   | 16   | 12   | 176  | 337   | 276   | 261   | 163    | 48   |
| 27          | 55    | 39    | 17   | 16   | 15   | 12   | 221  | 331   | 293   | 233   | 165    | 46   |
| 28          | 55    | 38    | 16   | 16   | 15   | 12   | 281  | 357   | 312   | 215   | 161    | 45   |
| 29          | 54    | 37    | 16   | 16   | ---  | 11   | 321  | 374   | 314   | 206   | 154    | 43   |
| 30          | 53    | 37    | 16   | 16   | ---  | 12   | 343  | 391   | 327   | 206   | 144    | 42   |
| 31          | 51    | ---   | 15   | 16   | ---  | 13   | ---  | 401   | ---   | 206   | 136    | ---  |
| TOTAL       | 1711  | 1278  | 717  | 519  | 436  | 416  | 2401 | 17796 | 17825 | 10802 | 4646   | 2631 |
| MEAN        | 55.2  | 42.6  | 23.1 | 16.7 | 15.6 | 13.4 | 80.0 | 574   | 594   | 348   | 150    | 87.7 |
| MAX         | 62    | 50    | 35   | 19   | 16   | 15   | 343  | 1090  | 1340  | 964   | 201    | 128  |
| MIN         | 51    | 37    | 15   | 15   | 15   | 11   | 13   | 299   | 276   | 182   | 108    | 42   |
| AC-FT       | 3390  | 2530  | 1420 | 1030 | 865  | 825  | 4760 | 35300 | 35360 | 21430 | 9220   | 5220 |
| CAL YR 1986 | TOTAL | 90641 |      | MEAN | 248  | MAX  | 1870 | MIN   | 15    | AC-FT | 179800 |      |
| WTR YR 1987 | TOTAL | 61178 |      | MEAN | 168  | MAX  | 1340 | MIN   | 11    | AC-FT | 121300 |      |

09196500 PINE CREEK ABOVE FREMONT LAKE, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1985, October 1986 to September 1987 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May and June 1987 (discontinued).

pH: March to July 1987 (discontinued).

WATER TEMPERATURE: March to June 1987 (discontinued).

INSTRUMENTATION: Specific conductance, pH, and temperature monitor from March 23 to July 7.

EXTREMES FOR CURRENT YEAR.--

pH: Maximum during period of operation, 7.0, July 6; minimum during period of operation, 6.1, May 19.

WATER TEMPERATURE: Maximum during period of operation, 10.0°C, July 14-15, 19; minimum during period of operation, 0.0°C, on many days March and April.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | PH<br>(STAND-<br>ARD<br>UNITS) | ALKA-<br>LINITY<br>WH WAT<br>TOTAL<br>MG/L AS<br>CACO3 | ALKA-<br>LINITY,<br>CARBON-<br>ATE<br>IT-FLD<br>(MG/L<br>CACO3) | BICAR-<br>BONATE<br>WH WAT<br>TOTAL<br>MG/L AS<br>HCO3 | CAR-<br>BONATE<br>WH WAT<br>TOTAL<br>MG/L AS<br>CO3 |
|-------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------------|-------------------------------------|--------------------------------|--------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------|
| OCT   |      |                                                 |                                                   |                                      |                                     |                                |                                                        |                                                                 |                                                        |                                                     |
| 02... | 1600 | 58                                              | 19                                                | 6.0                                  | 11.7                                | 6.2                            | 6                                                      | 6.0                                                             | 7                                                      | 0                                                   |
| NOV   |      |                                                 |                                                   |                                      |                                     |                                |                                                        |                                                                 |                                                        |                                                     |
| 13... | 1015 | 40                                              | 28                                                | 1.0                                  | 10.4                                | 6.6                            | --                                                     | --                                                              | --                                                     | --                                                  |
| 24... | 1405 | 42                                              | 18                                                | 1.0                                  | 11.4                                | 7.1                            | 7                                                      | 6.5                                                             | 8                                                      | 0                                                   |
| FEB   |      |                                                 |                                                   |                                      |                                     |                                |                                                        |                                                                 |                                                        |                                                     |
| 02... | 1320 | 16                                              | 28                                                | 0.0                                  | 11.6                                | 6.0                            | 10                                                     | 10                                                              | 12                                                     | 0                                                   |
| MAR   |      |                                                 |                                                   |                                      |                                     |                                |                                                        |                                                                 |                                                        |                                                     |
| 23... | 1220 | 14                                              | 30                                                | 0.0                                  | 11.0                                | 6.4                            | 8                                                      | 9.8                                                             | 12                                                     | 0                                                   |
| APR   |      |                                                 |                                                   |                                      |                                     |                                |                                                        |                                                                 |                                                        |                                                     |
| 22... | 0900 | 47                                              | 22                                                | 1.0                                  | --                                  | 6.4                            | 8                                                      | 8.0                                                             | 10                                                     | 0                                                   |
| MAY   |      |                                                 |                                                   |                                      |                                     |                                |                                                        |                                                                 |                                                        |                                                     |
| 04... | 1600 | 270                                             | 18                                                | 6.0                                  | --                                  | 6.4                            | --                                                     | --                                                              | --                                                     | --                                                  |
| 28... | 1150 | 355                                             | 18                                                | 4.5                                  | --                                  | 6.4                            | 6                                                      | 6.0                                                             | 7                                                      | 0                                                   |
| JUL   |      |                                                 |                                                   |                                      |                                     |                                |                                                        |                                                                 |                                                        |                                                     |
| 07... | 1130 | 201                                             | 12                                                | 12.0                                 | --                                  | 6.9                            | 8                                                      | 7.5                                                             | 9                                                      | 0                                                   |
| SEP   |      |                                                 |                                                   |                                      |                                     |                                |                                                        |                                                                 |                                                        |                                                     |
| 01... | 0940 | 131                                             | 12                                                | 18.0                                 | --                                  | 7.0                            | 13                                                     | 12                                                              | 14                                                     | 0                                                   |

| DATE  | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | BROMIDE<br>DIS-<br>SOLVED<br>(MG/L<br>AS BR) |
|-------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------|----------------------------------------------------|----------------------------------------------|
| OCT   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                     |                                               |                                                    |                                              |
| 02... | 7                                      | 2.3                                          | 0.20                                                 | 0.6                                          | 0.1                                     | 0.41                                                | 0.20                                                | 1.5                                           | 0.02                                               | <0.01                                        |
| NOV   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                     |                                               |                                                    |                                              |
| 13... | 10                                     | 3.1                                          | 0.50                                                 | 0.8                                          | 0.1                                     | 0.49                                                | 0.45                                                | 1.8                                           | 0.02                                               | <0.01                                        |
| 24... | 8                                      | 2.8                                          | 0.30                                                 | 0.6                                          | 0.1                                     | 0.43                                                | 0.22                                                | 1.7                                           | 0.03                                               | <0.01                                        |
| FEB   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                     |                                               |                                                    |                                              |
| 02... | 11                                     | 3.6                                          | 0.40                                                 | 0.9                                          | 0.1                                     | 0.62                                                | 0.34                                                | 2.2                                           | 0.04                                               | <0.01                                        |
| MAR   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                     |                                               |                                                    |                                              |
| 23... | 11                                     | 3.8                                          | 0.33                                                 | 0.9                                          | 0.1                                     | 0.57                                                | 0.28                                                | 2.2                                           | 0.04                                               | <0.01                                        |
| APR   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                     |                                               |                                                    |                                              |
| 22... | 10                                     | 3.2                                          | 0.42                                                 | 0.8                                          | 0.1                                     | 0.51                                                | --                                                  | 2.0                                           | 0.29                                               | <0.01                                        |
| MAY   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                     |                                               |                                                    |                                              |
| 04... | 7                                      | 2.3                                          | 0.19                                                 | 0.6                                          | 0.1                                     | 0.43                                                | 0.28                                                | 1.4                                           | 0.02                                               | <0.01                                        |
| 28... | 9                                      | 3.1                                          | 0.34                                                 | 0.9                                          | 0.1                                     | 0.59                                                | 0.33                                                | 1.5                                           | 0.04                                               | <0.01                                        |
| JUL   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                     |                                               |                                                    |                                              |
| 07... | 9                                      | 3.1                                          | 0.31                                                 | 0.6                                          | 0.1                                     | 0.53                                                | 0.26                                                | 1.2                                           | 0.03                                               | <0.01                                        |
| SEP   |                                        |                                              |                                                      |                                              |                                         |                                                     |                                                     |                                               |                                                    |                                              |
| 01... | 7                                      | 2.7                                          | 0.18                                                 | 0.7                                          | 0.1                                     | 0.44                                                | 0.37                                                | 1.5                                           | 0.04                                               | <0.01                                        |

09196500 PINE CREEK ABOVE FREMONT LAKE, WY--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NITRATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | ALUM-<br>INUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AL) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN) | CARBON,<br>ORGANIC<br>DIS-<br>SOLVED<br>(MG/L<br>AS C) |
|-----------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------|--------------------------------------------|------------------------------------------------------|--------------------------------------------------------|
| OCT 02... | 1.7                                               | 0.002                                                         | 0.03                                                          | 0.018                                                | <0.01                                                          | 20                                                  | 6                                          | <0.5                                       | <1                                                   | 1.1                                                    |
| NOV 13... | 2.3                                               | 0.015                                                         | 0.06                                                          | <0.005                                               | <0.01                                                          | 30                                                  | 40                                         | <1                                         | 3                                                    | 1.2                                                    |
| 24...     | 2.2                                               | 0.003                                                         | 0.20                                                          | <0.005                                               | <0.01                                                          | 20                                                  | 10                                         | 1                                          | 2                                                    | 1.4                                                    |
| FEB 02... | 3.4                                               | 0.052                                                         | 0.22                                                          | 0.008                                                | <0.01                                                          | <10                                                 | 16                                         | 2                                          | 3                                                    | 2.4                                                    |
| MAR 23... | 2.7                                               | 0.034                                                         | 0.19                                                          | <0.005                                               | <0.01                                                          | 20                                                  | 13                                         | <0.5                                       | <1                                                   | 1.5                                                    |
| APR 22... | 3.1                                               | 0.034                                                         | 0.55                                                          | <0.004                                               | 0.01                                                           | 30                                                  | 13                                         | <0.5                                       | 2                                                    | 1.8                                                    |
| MAY 04... | 2.2                                               | 0.056                                                         | 0.07                                                          | <0.005                                               | <0.01                                                          | 30                                                  | 11                                         | <0.5                                       | 2                                                    | 2.6                                                    |
| 28...     | 2.5                                               | 0.026                                                         | 0.05                                                          | 0.006                                                | <0.01                                                          | 30                                                  | 22                                         | <0.5                                       | 3                                                    | 4.3                                                    |
| JUL 07... | 1.6                                               | 0.060                                                         | 0.03                                                          | <0.005                                               | <0.01                                                          | 10                                                  | 9                                          | <0.5                                       | <1                                                   | 1.7                                                    |
| SEP 01... | 1.2                                               | 0.034                                                         | 0.25                                                          | 0.009                                                | <0.01                                                          | <10                                                 | <3                                         | 1                                          | 3                                                    | 6.2                                                    |

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

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

09196500 PINE CREEK ABOVE FREMONT LAKE, WY--Continued

PH (STANDARD UNITS), MARCH TO JULY 1987

| DAY   | MAX   | MIN | MAX   | MIN | MAX | MIN | MAX  | MIN | MAX  | MIN |
|-------|-------|-----|-------|-----|-----|-----|------|-----|------|-----|
|       | MARCH |     | APRIL |     | MAY |     | JUNE |     | JULY |     |
| 1     | --    | --  | 6.3   | 6.3 | --  | --  | 6.5  | 6.4 | 6.9  | 6.7 |
| 2     | --    | --  | 6.4   | 6.3 | --  | --  | 6.5  | 6.4 | 6.9  | 6.7 |
| 3     | --    | --  | 6.3   | 6.3 | --  | --  | 6.6  | 6.5 | 6.9  | 6.8 |
| 4     | --    | --  | 6.3   | 6.3 | 6.5 | 6.4 | 6.6  | 6.5 | 6.9  | 6.8 |
| 5     | --    | --  | 6.3   | 6.3 | 6.5 | 6.4 | 6.6  | 6.5 | 6.9  | 6.8 |
| 6     | --    | --  | 6.3   | 6.3 | 6.5 | 6.4 | 6.6  | 6.4 | 7.0  | 6.8 |
| 7     | --    | --  | 6.4   | 6.3 | 6.5 | 6.4 | 6.6  | 6.5 | 6.9  | 6.8 |
| 8     | --    | --  | 6.4   | 6.3 | 6.4 | 6.4 | 6.6  | 6.4 | --   | --  |
| 9     | --    | --  | 6.4   | 6.3 | 6.4 | 6.4 | 6.5  | 6.4 | --   | --  |
| 10    | --    | --  | 6.4   | 6.3 | 6.4 | 6.3 | 6.5  | 6.4 | --   | --  |
| 11    | --    | --  | 6.4   | 6.4 | 6.4 | 6.3 | 6.5  | 6.4 | --   | --  |
| 12    | --    | --  | 6.4   | 6.3 | 6.4 | 6.3 | 6.5  | 6.4 | --   | --  |
| 13    | --    | --  | 6.4   | 6.3 | 6.4 | 6.3 | 6.6  | 6.4 | --   | --  |
| 14    | --    | --  | 6.4   | 6.3 | 6.4 | 6.3 | 6.6  | 6.5 | --   | --  |
| 15    | --    | --  | 6.4   | 6.3 | 6.4 | 6.3 | 6.6  | 6.5 | --   | --  |
| 16    | --    | --  | 6.4   | 6.3 | 6.4 | 6.3 | 6.6  | 6.5 | --   | --  |
| 17    | --    | --  | 6.4   | 6.3 | 6.3 | 6.2 | 6.6  | 6.5 | --   | --  |
| 18    | --    | --  | 6.4   | 6.3 | 6.3 | 6.2 | 6.7  | 6.6 | --   | --  |
| 19    | --    | --  | 6.4   | 6.3 | 6.3 | 6.1 | 6.7  | 6.6 | --   | --  |
| 20    | --    | --  | 6.4   | 6.3 | 6.4 | 6.3 | 6.7  | 6.6 | --   | --  |
| 21    | --    | --  | 6.4   | 6.3 | 6.4 | 6.3 | 6.7  | 6.6 | --   | --  |
| 22    | --    | --  | 6.4   | 6.3 | 6.4 | 6.3 | 6.8  | 6.6 | --   | --  |
| 23    | 6.4   | 6.3 | --    | --  | 6.4 | 6.3 | 6.8  | 6.7 | --   | --  |
| 24    | 6.4   | 6.3 | --    | --  | 6.4 | 6.3 | 6.8  | 6.7 | --   | --  |
| 25    | 6.4   | 6.3 | --    | --  | 6.4 | 6.3 | 6.8  | 6.7 | --   | --  |
| 26    | 6.4   | 6.3 | --    | --  | 6.4 | 6.4 | 6.8  | 6.7 | --   | --  |
| 27    | 6.4   | 6.3 | --    | --  | 6.4 | 6.4 | 6.8  | 6.7 | --   | --  |
| 28    | 6.3   | 6.3 | --    | --  | 6.4 | 6.3 | 6.8  | 6.7 | --   | --  |
| 29    | 6.3   | 6.3 | --    | --  | 6.5 | 6.4 | 6.8  | 6.7 | --   | --  |
| 30    | 6.3   | 6.3 | --    | --  | 6.5 | 6.4 | 6.9  | 6.7 | --   | --  |
| 31    | 6.3   | 6.3 | --    | --  | 6.5 | 6.4 | --   | --  | --   | --  |
| MONTH | 6.4   | 6.3 | 6.4   | 6.3 | 6.5 | 6.1 | 6.9  | 6.4 | 7.0  | 6.7 |

## GREEN RIVER BASIN

09196500 PINE CREEK ABOVE FREMONT LAKE, WY--Continued

TEMPERATURE, WATER (DEG. C), MARCH TO JUNE 1987

| DAY   | MAX   | MIN | MAX   | MIN | MAX | MIN | MAX  | MIN |
|-------|-------|-----|-------|-----|-----|-----|------|-----|
|       | MARCH |     | APRIL |     | MAY |     | JUNE |     |
| 1     | ---   | --- | 1.5   | .0  | 4.5 | 2.0 | 6.5  | 4.0 |
| 2     | ---   | --- | 1.0   | .0  | 3.5 | 2.5 | 7.0  | 4.0 |
| 3     | ---   | --- | 1.5   | .0  | 5.0 | 2.0 | 8.0  | 4.5 |
| 4     | ---   | --- | 1.5   | .0  | 6.0 | 3.0 | 9.0  | 5.5 |
| 5     | ---   | --- | 1.5   | .0  | 6.5 | 3.0 | 8.5  | 6.0 |
| 6     | ---   | --- | 1.5   | .0  | 6.5 | 3.5 | 9.0  | 6.5 |
| 7     | ---   | --- | 2.0   | .0  | 7.0 | 3.5 | 8.5  | 7.0 |
| 8     | ---   | --- | 1.5   | .0  | 6.0 | 4.0 | 8.5  | 7.5 |
| 9     | ---   | --- | 1.5   | .0  | 6.0 | 4.0 | 8.5  | 7.5 |
| 10    | ---   | --- | 2.0   | .0  | 6.0 | 4.5 | 8.0  | 7.0 |
| 11    | ---   | --- | 1.5   | .0  | 5.5 | 4.5 | 8.5  | 6.5 |
| 12    | ---   | --- | 1.0   | .0  | 6.0 | 4.0 | 9.0  | 7.0 |
| 13    | ---   | --- | 2.0   | .0  | 5.5 | 4.0 | 9.5  | 7.5 |
| 14    | ---   | --- | 2.5   | .0  | 7.0 | 4.0 | 10.0 | 8.0 |
| 15    | ---   | --- | 2.5   | .0  | 7.0 | 5.0 | 10.0 | 8.5 |
| 16    | ---   | --- | 2.5   | .0  | 6.5 | 5.5 | 9.5  | 8.5 |
| 17    | ---   | --- | 2.5   | .0  | 6.0 | 5.0 | 9.5  | 8.0 |
| 18    | ---   | --- | 2.0   | .0  | 5.0 | 4.5 | 9.5  | 8.5 |
| 19    | ---   | --- | 2.0   | .0  | 6.0 | 4.5 | 10.0 | 8.5 |
| 20    | ---   | --- | 1.5   | .0  | 5.5 | 5.0 | ---  | --- |
| 21    | ---   | --- | 3.5   | .0  | 5.5 | 4.0 | ---  | --- |
| 22    | ---   | --- | 4.5   | .5  | 5.5 | 4.5 | ---  | --- |
| 23    | .5    | .0  | 4.5   | .5  | 6.5 | 4.5 | ---  | --- |
| 24    | .5    | .0  | 4.0   | 1.0 | 5.5 | 4.5 | ---  | --- |
| 25    | .5    | .0  | 4.0   | 1.0 | 6.5 | 4.5 | ---  | --- |
| 26    | .5    | .0  | 5.0   | 1.5 | 6.0 | 4.0 | ---  | --- |
| 27    | .0    | .0  | 5.0   | 1.5 | 5.0 | 3.5 | ---  | --- |
| 28    | .5    | .0  | 5.0   | 1.5 | 6.0 | 4.0 | ---  | --- |
| 29    | .0    | .0  | 4.5   | 2.0 | 7.0 | 4.5 | ---  | --- |
| 30    | .0    | .0  | 4.5   | 2.5 | 7.0 | 4.5 | ---  | --- |
| 31    | 1.0   | .0  | ---   | --- | 6.5 | 5.0 | ---  | --- |
| MONTH | 1.0   | .0  | 5.0   | .0  | 7.0 | 2.0 | 10.0 | 4.0 |

## 09203000 EAST FORK RIVER NEAR BIG SANDY, WY

LOCATION.--Lat 42°40', long 109°25', in sec.7, T.31 N., R.105 W., Sublette County, Hydrologic Unit 14040102, on left bank 1.0 mi downstream from Jim Creek and 4.0 mi northeast of Big Sandy.

DRAINAGE AREA.--79.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1938 to current year. Prior to October 1967, published as East Fork near Big Sandy. Monthly discharge only for some periods, published in WSP 1313.

GAGE.--Water-stage recorder. Elevation of gage is 7,800 ft above National Geodetic Vertical Datum of 1929, by barometer.

REMARKS.--Estimated daily discharges: Nov. 1 to Mar. 12, and Apr. 10-12. Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

AVERAGE DISCHARGE.--49 years, 106 ft<sup>3</sup>/s, 76,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,330 ft<sup>3</sup>/s, June 2, 1986, gage height, 7.00 ft; maximum gage height, 7.16 ft, June 11, 1965; minimum discharge observed, 1.2 ft<sup>3</sup>/s, Jan. 4, 1940, Jan. 25, 1977 (discharge measurements).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|--------|------|--------------------------------|------------------|
| May 18 | 0900 | *1,030                         | *5.92            | June 9 | 2200 | 880                            | 5.62             |

Minimum daily discharge, 7.5 ft<sup>3</sup>/s, Jan. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR   | APR  | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|---------|-------|-------|-------|-------|------|-------|-------|-------|--------|------|
| 1           | 26    | 23      | 16    | 8.5   | 9.0   | 8.5   | 11   | 496   | 350   | 113   | 59     | 28   |
| 2           | 25    | 22      | 15    | 9.0   | 9.2   | 9.0   | 11   | 393   | 267   | 101   | 55     | 26   |
| 3           | 24    | 22      | 15    | 9.0   | 9.5   | 9.5   | 12   | 274   | 228   | 95    | 50     | 26   |
| 4           | 23    | 22      | 14    | 9.5   | 9.5   | 10    | 13   | 253   | 239   | 90    | 43     | 55   |
| 5           | 25    | 23      | 14    | 9.5   | 9.2   | 11    | 15   | 314   | 293   | 85    | 40     | 66   |
| 6           | 25    | 24      | 14    | 9.5   | 9.2   | 12    | 16   | 416   | 310   | 76    | 38     | 53   |
| 7           | 29    | 23      | 15    | 9.5   | 9.2   | 12    | 19   | 499   | 366   | 71    | 37     | 44   |
| 8           | 31    | 22      | 15    | 9.0   | 9.2   | 12    | 19   | 519   | 577   | 66    | 39     | 39   |
| 9           | 32    | 22      | 13    | 8.5   | 9.2   | 11    | 16   | 494   | 758   | 69    | 36     | 36   |
| 10          | 32    | 22      | 11    | 8.0   | 9.2   | 11    | 11   | 475   | 706   | 107   | 32     | 32   |
| 11          | 29    | 25      | 9.0   | 8.0   | 9.5   | 11    | 12   | 397   | 506   | 360   | 31     | 29   |
| 12          | 24    | 28      | 9.0   | 8.5   | 10    | 11    | 13   | 412   | 422   | 236   | 30     | 27   |
| 13          | 29    | 25      | 9.5   | 8.5   | 10    | 11    | 14   | 473   | 382   | 167   | 27     | 26   |
| 14          | 27    | 22      | 10    | 8.5   | 10    | 11    | 16   | 462   | 343   | 130   | 27     | 25   |
| 15          | 25    | 24      | 10    | 8.5   | 9.5   | 11    | 21   | 500   | 299   | 110   | 50     | 24   |
| 16          | 24    | 26      | 10    | 8.5   | 9.0   | 11    | 25   | 499   | 321   | 96    | 67     | 23   |
| 17          | 24    | 27      | 10    | 8.0   | 9.0   | 11    | 30   | 571   | 262   | 107   | 55     | 23   |
| 18          | 24    | 27      | 10    | 7.5   | 9.0   | 11    | 37   | 947   | 211   | 244   | 44     | 22   |
| 19          | 26    | 26      | 10    | 8.0   | 9.0   | 11    | 40   | 660   | 180   | 212   | 38     | 21   |
| 20          | 29    | 25      | 10    | 8.0   | 9.0   | 11    | 33   | 455   | 163   | 149   | 33     | 20   |
| 21          | 32    | 25      | 10    | 8.0   | 8.6   | 11    | 36   | 427   | 154   | 128   | 30     | 19   |
| 22          | 36    | 25      | 10    | 8.0   | 8.6   | 11    | 43   | 368   | 146   | 203   | 30     | 19   |
| 23          | 36    | 23      | 10    | 8.5   | 8.6   | 11    | 63   | 295   | 132   | 159   | 29     | 18   |
| 24          | 34    | 20      | 10    | 9.0   | 9.0   | 11    | 105  | 264   | 118   | 124   | 46     | 17   |
| 25          | 33    | 21      | 10    | 9.5   | 9.0   | 11    | 142  | 282   | 109   | 106   | 69     | 17   |
| 26          | 32    | 19      | 10    | 9.5   | 8.5   | 11    | 204  | 279   | 105   | 100   | 56     | 17   |
| 27          | 33    | 17      | 10    | 9.5   | 8.5   | 10    | 276  | 294   | 102   | 90    | 46     | 15   |
| 28          | 32    | 16      | 10    | 9.5   | 8.5   | 9.8   | 368  | 313   | 100   | 81    | 40     | 15   |
| 29          | 30    | 16      | 9.5   | 9.5   | ---   | 9.8   | 443  | 366   | 102   | 77    | 36     | 15   |
| 30          | 30    | 17      | 9.0   | 9.0   | ---   | 10    | 477  | 391   | 132   | 73    | 32     | 15   |
| 31          | 24    | ---     | 8.5   | 8.5   | ---   | 11    | ---  | 427   | ---   | 67    | 30     | ---  |
| TOTAL       | 885   | 679     | 346.5 | 270.5 | 255.7 | 332.6 | 2541 | 13215 | 8383  | 3892  | 1275   | 812  |
| MEAN        | 28.5  | 22.6    | 11.2  | 8.73  | 9.13  | 10.7  | 84.7 | 426   | 279   | 126   | 41.1   | 27.1 |
| MAX         | 36    | 28      | 16    | 9.5   | 10    | 12    | 477  | 947   | 758   | 360   | 69     | 66   |
| MIN         | 23    | 16      | 8.5   | 7.5   | 8.5   | 8.5   | 11   | 253   | 100   | 66    | 27     | 15   |
| AC-FT       | 1760  | 1350    | 687   | 537   | 507   | 660   | 5040 | 26210 | 16630 | 7720  | 2530   | 1610 |
| CAL YR 1986 | TOTAL | 64542.5 |       | MEAN  | 177   | MAX   | 2120 | MIN   | 8.5   | AC-FT | 128000 |      |
| WTR YR 1987 | TOTAL | 32887.3 |       | MEAN  | 90.1  | MAX   | 947  | MIN   | 7.5   | AC-FT | 65230  |      |



## 09205000 NEW FORK RIVER NEAR BIG PINEY, WY

LOCATION.--Lat 42°34'02", long 109°55'46", in SE1/4 NE1/4 NE1/4 sec.22, T.30 N., R.110 W., Sublette County, Hydrologic Unit 14040102, on right bank 350 ft downstream from old highway bridge, 3.4 mi upstream from mouth, and 9.5 mi northeast of Big Piney.

DRAINAGE AREA.--1,230 mi<sup>2</sup>, approximately.

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

GAGE.--Water-stage recorder. Elevation of gage is 6,800 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 8 to Apr. 8. Records good except those for estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs, power development, and diversions for irrigation of about 62,100 acres upstream from station.

AVERAGE DISCHARGE.--33 years, 759 ft<sup>3</sup>/s, 549,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,190 ft<sup>3</sup>/s, June 7, 1986, gage height, 8.28 ft; minimum daily, 90 ft<sup>3</sup>/s, Jan. 13, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,020 ft<sup>3</sup>/s, June 11, gage height, 5.29 ft; minimum daily, 170 ft<sup>3</sup>/s, Jan. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY    | JUN    | JUL   | AUG    | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|--------|--------|-------|--------|-------|
| 1           | 431   | 400    | 270   | 230   | 210   | 200   | 270   | 1210   | 2230   | 917   | 960    | 416   |
| 2           | 448   | 394    | 230   | 230   | 230   | 220   | 280   | 1340   | 1920   | 902   | 875    | 397   |
| 3           | 448   | 394    | 250   | 230   | 250   | 235   | 300   | 1330   | 1650   | 866   | 804    | 377   |
| 4           | 431   | 384    | 280   | 230   | 230   | 250   | 350   | 1260   | 1470   | 877   | 740    | 446   |
| 5           | 416   | 387    | 290   | 240   | 220   | 270   | 400   | 1230   | 1360   | 863   | 693    | 444   |
| 6           | 409   | 385    | 300   | 240   | 220   | 290   | 500   | 1280   | 1270   | 784   | 667    | 428   |
| 7           | 402   | 393    | 310   | 230   | 220   | 310   | 650   | 1340   | 1340   | 744   | 630    | 412   |
| 8           | 391   | 390    | 280   | 210   | 220   | 350   | 700   | 1420   | 1660   | 725   | 602    | 392   |
| 9           | 390   | 370    | 240   | 190   | 220   | 340   | 692   | 1590   | 2240   | 754   | 568    | 376   |
| 10          | 385   | 350    | 220   | 180   | 220   | 320   | 613   | 1760   | 3200   | 847   | 543    | 366   |
| 11          | 378   | 350    | 220   | 190   | 230   | 300   | 622   | 1800   | 3950   | 1340  | 532    | 360   |
| 12          | 382   | 380    | 230   | 200   | 230   | 300   | 646   | 1770   | 3620   | 1710  | 505    | 355   |
| 13          | 379   | 350    | 240   | 210   | 230   | 320   | 643   | 1630   | 3100   | 1540  | 466    | 349   |
| 14          | 376   | 360    | 250   | 210   | 220   | 330   | 609   | 1770   | 2690   | 1500  | 457    | 353   |
| 15          | 376   | 370    | 250   | 210   | 210   | 320   | 678   | 1810   | 2450   | 1380  | 546    | 353   |
| 16          | 376   | 380    | 250   | 210   | 210   | 300   | 806   | 1880   | 2320   | 1250  | 604    | 341   |
| 17          | 370   | 400    | 250   | 190   | 210   | 310   | 833   | 2080   | 2250   | 1200  | 561    | 328   |
| 18          | 379   | 400    | 240   | 170   | 210   | 320   | 756   | 2620   | 2060   | 1360  | 512    | 329   |
| 19          | 439   | 380    | 240   | 190   | 210   | 320   | 696   | 3490   | 1810   | 1580  | 474    | 325   |
| 20          | 455   | 380    | 250   | 180   | 210   | 300   | 615   | 3510   | 1550   | 1620  | 463    | 317   |
| 21          | 433   | 380    | 250   | 180   | 200   | 280   | 534   | 3390   | 1340   | 1610  | 451    | 325   |
| 22          | 426   | 380    | 240   | 180   | 200   | 280   | 519   | 3380   | 1190   | 1650  | 435    | 323   |
| 23          | 415   | 350    | 240   | 190   | 200   | 280   | 504   | 3050   | 1110   | 1660  | 441    | 323   |
| 24          | 416   | 370    | 250   | 200   | 210   | 290   | 481   | 2550   | 1070   | 1610  | 467    | 310   |
| 25          | 410   | 397    | 240   | 210   | 200   | 300   | 524   | 2340   | 1010   | 1550  | 531    | 306   |
| 26          | 407   | 350    | 240   | 215   | 190   | 300   | 585   | 2300   | 960    | 1450  | 520    | 302   |
| 27          | 402   | 330    | 240   | 220   | 190   | 300   | 652   | 2250   | 932    | 1340  | 503    | 295   |
| 28          | 400   | 350    | 240   | 220   | 190   | 280   | 757   | 2410   | 862    | 1260  | 481    | 295   |
| 29          | 395   | 360    | 230   | 220   | ---   | 260   | 900   | 2550   | 833    | 1160  | 458    | 289   |
| 30          | 392   | 330    | 230   | 210   | ---   | 250   | 1110  | 2520   | 878    | 1110  | 417    | 294   |
| 31          | 404   | ---    | 230   | 200   | ---   | 260   | ---   | 2340   | ---    | 1030  | 425    | ---   |
| TOTAL       | 12561 | 11194  | 7720  | 6415  | 5990  | 8985  | 18225 | 65200  | 54325  | 38189 | 17331  | 10526 |
| MEAN        | 405   | 373    | 249   | 207   | 214   | 290   | 608   | 2103   | 1811   | 1232  | 559    | 351   |
| MAX         | 455   | 400    | 310   | 240   | 250   | 350   | 1110  | 3510   | 3950   | 1710  | 960    | 446   |
| MIN         | 370   | 330    | 220   | 170   | 190   | 200   | 270   | 1210   | 833    | 725   | 417    | 289   |
| AC-FT       | 24910 | 22200  | 15310 | 12720 | 11880 | 17820 | 36150 | 129300 | 107800 | 75750 | 34380  | 20880 |
| CAL YR 1986 | TOTAL | 471898 |       | MEAN  | 1293  | MAX   | 9110  | MIN    | 180    | AC-FT | 936000 |       |
| WTR YR 1987 | TOTAL | 256661 |       | MEAN  | 703   | MAX   | 3950  | MIN    | 170    | AC-FT | 509100 |       |

## 09209400 GREEN RIVER NEAR LA BARGE, WY

LOCATION.--Lat 42°11'34", long 110°09'45", in SE1/4 SE1/4 NW1/4 sec.33, T.26 N., R.112 W., Lincoln County, Hydrologic Unit 14040101, on right bank 1.7 mi upstream from high-water line of Fontenelle Reservoir at elevation 6,513 ft, 4.0 mi upstream from Muddy Creek, and 5.0 mi south of La Barge.

DRAINAGE AREA.--3,910 mi<sup>2</sup>, approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1963 to current year. Records are equivalent to those published August 1946 to March 1965 as Green River near Fontenelle (station 09209500).

GAGE.--Water-stage recorder. Elevation of gage is 6,520 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 9 to Apr. 11. Records good except those for estimated daily discharge, which are poor. Natural flow of stream affected by storage reservoirs and diversions for irrigation of about 198,000 acres upstream from station.

AVERAGE DISCHARGE.--41 years (water years 1947-87), 1,690 ft<sup>3</sup>/s, 1,224,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,800 ft<sup>3</sup>/s, June 9, 1986, gage height, 10.50 ft; minimum daily, 188 ft<sup>3</sup>/s, May 17, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,620 ft<sup>3</sup>/s, May 22, gage height, 7.84 ft; minimum daily, 500 ft<sup>3</sup>/s, Jan. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR   | APR    | MAY    | JUN    | JUL    | AUG     | SEP   |
|-------------|-------|---------|-------|-------|-------|-------|--------|--------|--------|--------|---------|-------|
| 1           | 1090  | 1000    | 830   | 680   | 600   | 650   | 1000   | 3290   | 3620   | 1760   | 2010    | 1020  |
| 2           | 1180  | 1010    | 800   | 680   | 640   | 700   | 1100   | 3570   | 3180   | 1760   | 1900    | 971   |
| 3           | 1280  | 971     | 700   | 680   | 680   | 750   | 1200   | 3500   | 2790   | 1700   | 1760    | 915   |
| 4           | 1260  | 967     | 750   | 680   | 680   | 800   | 1400   | 3060   | 2530   | 1680   | 1630    | 970   |
| 5           | 1190  | 973     | 800   | 700   | 660   | 850   | 1700   | 2720   | 2330   | 1670   | 1490    | 1030  |
| 6           | 1120  | 971     | 830   | 700   | 650   | 900   | 2200   | 2580   | 2200   | 1530   | 1380    | 1020  |
| 7           | 1070  | 991     | 850   | 660   | 650   | 950   | 2800   | 2610   | 2210   | 1380   | 1310    | 1010  |
| 8           | 1030  | 971     | 800   | 620   | 650   | 1000  | 3000   | 2680   | 2520   | 1320   | 1250    | 966   |
| 9           | 1010  | 830     | 700   | 580   | 650   | 1100  | 2900   | 2790   | 3180   | 1330   | 1190    | 917   |
| 10          | 990   | 800     | 650   | 540   | 660   | 1050  | 2700   | 2970   | 4400   | 1450   | 1130    | 880   |
| 11          | 979   | 800     | 600   | 560   | 680   | 1000  | 2800   | 3200   | 5900   | 1950   | 1090    | 845   |
| 12          | 986   | 830     | 650   | 580   | 680   | 980   | 2870   | 3200   | 5880   | 2640   | 1070    | 822   |
| 13          | 1010  | 800     | 700   | 600   | 680   | 1000  | 2900   | 3050   | 5130   | 2780   | 1020    | 805   |
| 14          | 979   | 820     | 760   | 600   | 640   | 1050  | 2690   | 3070   | 4480   | 2700   | 996     | 797   |
| 15          | 967   | 850     | 760   | 600   | 630   | 1000  | 2900   | 3130   | 4110   | 2420   | 1140    | 786   |
| 16          | 946   | 900     | 760   | 600   | 630   | 950   | 3570   | 3170   | 3940   | 2170   | 1520    | 770   |
| 17          | 934   | 950     | 760   | 550   | 630   | 1000  | 4160   | 3480   | 3830   | 2140   | 1540    | 752   |
| 18          | 943   | 900     | 740   | 500   | 630   | 1000  | 4130   | 4320   | 3710   | 2480   | 1380    | 741   |
| 19          | 1150  | 850     | 720   | 540   | 630   | 1000  | 4020   | 5540   | 3400   | 2800   | 1250    | 732   |
| 20          | 1410  | 850     | 740   | 520   | 630   | 950   | 3410   | 5970   | 3000   | 2970   | 1150    | 716   |
| 21          | 1440  | 850     | 740   | 520   | 600   | 900   | 2610   | 6070   | 2610   | 2970   | 1090    | 712   |
| 22          | 1300  | 850     | 720   | 520   | 600   | 900   | 2240   | 6520   | 2340   | 2890   | 1060    | 696   |
| 23          | 1200  | 800     | 720   | 550   | 600   | 900   | 2290   | 6140   | 2160   | 2850   | 1050    | 690   |
| 24          | 1140  | 850     | 740   | 580   | 630   | 950   | 2410   | 5060   | 2040   | 2820   | 1190    | 676   |
| 25          | 1090  | 900     | 720   | 600   | 630   | 1000  | 2470   | 4480   | 1970   | 2790   | 1330    | 645   |
| 26          | 1050  | 880     | 720   | 610   | 600   | 1000  | 2480   | 4490   | 1830   | 2630   | 1340    | 631   |
| 27          | 1020  | 860     | 720   | 610   | 600   | 1000  | 2560   | 4390   | 1740   | 2430   | 1420    | 620   |
| 28          | 1010  | 900     | 720   | 610   | 600   | 960   | 2690   | 4280   | 1620   | 2310   | 1440    | 618   |
| 29          | 989   | 900     | 700   | 610   | ---   | 920   | 2890   | 4400   | 1530   | 2170   | 1310    | 615   |
| 30          | 973   | 860     | 680   | 580   | ---   | 900   | 3100   | 4430   | 1570   | 2130   | 1160    | 615   |
| 31          | 967   | ---     | 680   | 580   | ---   | 950   | ---    | 4040   | ---    | 2080   | 1080    | ---   |
| TOTAL       | 33703 | 26684   | 22760 | 18540 | 17840 | 29060 | 79190  | 122200 | 91750  | 68700  | 40676   | 23983 |
| MEAN        | 1087  | 889     | 734   | 598   | 637   | 937   | 2640   | 3942   | 3058   | 2216   | 1312    | 799   |
| MAX         | 1440  | 1010    | 850   | 700   | 680   | 1100  | 4160   | 6520   | 5900   | 2970   | 2010    | 1030  |
| MIN         | 934   | 800     | 600   | 500   | 600   | 650   | 1000   | 2580   | 1530   | 1320   | 996     | 615   |
| AC-FT       | 66850 | 52930   | 45140 | 36770 | 35390 | 57640 | 157100 | 242400 | 182000 | 136300 | 80680   | 47570 |
| CAL YR 1986 | TOTAL | 1080842 |       | MEAN  | 2961  | MAX   | 18800  | MIN    | 420    | AC-FT  | 2144000 |       |
| WTR YR 1987 | TOTAL | 575086  |       | MEAN  | 1576  | MAX   | 6520   | MIN    | 500    | AC-FT  | 1141000 |       |

## GREEN RIVER BASIN

09209400 GREEN RIVER NEAR LA BARGE, WY--Continued  
(National stream-quality accounting network station)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1963 to September 1976.

WATER TEMPERATURES: October 1963 to September 1976.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TUR-<br>BID-<br>ITY<br>(NTU) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>SATUR-<br>ATION | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|----------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------|
| OCT<br>03... | 0950 | 1260                                            | 432                                               | 8.1                            | 14                           | 8.0                                  | 602                                                  | 9.6                                 | 0                                            | K7                                                             | 100                                                                |
| DEC<br>01... | 1645 | 830                                             | 325                                               | 8.2                            | 3.1                          | 0.0                                  | 605                                                  | 12.4                                | 107                                          | K3                                                             | 74                                                                 |
| FEB<br>18... | 1115 | 630                                             | 490                                               | 8.2                            | 0.5                          | 0.0                                  | 600                                                  | 9.6                                 | 84                                           | K3                                                             | K4                                                                 |
| APR<br>20... | 1700 | 3240                                            | 375                                               | 8.0                            | 40                           | 5.0                                  | 610                                                  | 10.6                                | 104                                          | K6                                                             | 30                                                                 |
| JUN<br>16... | 1345 | 3750                                            | 245                                               | 8.1                            | 6.4                          | 18.0                                 | 605                                                  | 8.0                                 | 107                                          | 59                                                             | 29                                                                 |
| AUG<br>20... | 1240 | 1140                                            | 345                                               | 8.4                            | 5.4                          | 18.0                                 | 710                                                  | 9.2                                 | 105                                          | 48                                                             | 25                                                                 |

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

| DATE         | HARD-<br>NESS<br>(MG/L<br>AS<br>CAC03) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CAC03) | ALKA-<br>LINITY,<br>CARBON-<br>ATE<br>IT-FLD<br>(MG/L<br>CAC03) | BICAR-<br>BONATE<br>WH WAT<br>TOTAL<br>FIELD<br>MG/L AS<br>HCO3 | CAR-<br>BONATE<br>WH WAT<br>TOTAL<br>FIELD<br>MG/L AS<br>CO3 |
|--------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|
| OCT<br>03... | 200                                    | 51                                           | 17                                                   | 18                                           | 0.6                                     | 1.7                                                 | 158                                             | 153                                                             | 190                                                             | 0                                                            |
| DEC<br>01... | 210                                    | 56                                           | 16                                                   | 14                                           | 0.4                                     | 1.5                                                 | 161                                             | 155                                                             | 190                                                             | 0                                                            |
| FEB<br>18... | 210                                    | 58                                           | 16                                                   | 13                                           | 0.4                                     | 1.6                                                 | 157                                             | 220                                                             | 268                                                             | 0                                                            |
| APR<br>20... | 170                                    | 46                                           | 13                                                   | 9.6                                          | 0.3                                     | 2.7                                                 | 152                                             | 145                                                             | 177                                                             | 0                                                            |
| JUN<br>16... | 100                                    | 28                                           | 7.8                                                  | 9.2                                          | 0.4                                     | 1.1                                                 | 98                                              | 106                                                             | 130                                                             | 0                                                            |
| AUG<br>20... | 130                                    | 35                                           | 10                                                   | 11                                           | 0.4                                     | 1.5                                                 | 113                                             | 149                                                             | 60                                                              | 60                                                           |

| DATE         | CARBON<br>DIOXIDE<br>DIS-<br>SOLVED<br>(MG/L<br>AS CO2) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) |
|--------------|---------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|
| OCT<br>03... | 2.4                                                     | 65                                            | 5.2                                                 | 0.2                                                | 7.5                                               | 269                                                                | 260                                                            | 0.37                                                | 915                                               | <0.1                                                          | <0.01                                                |
| DEC<br>01... | 1.9                                                     | 68                                            | 3.7                                                 | 0.3                                                | 8.2                                               | 268                                                                | 260                                                            | 0.36                                                | 601                                               | <0.1                                                          | 0.08                                                 |
| FEB<br>18... | 1.9                                                     | 77                                            | 3.9                                                 | 0.2                                                | 8.9                                               | 267                                                                | 270                                                            | 0.36                                                | 454                                               | 0.1                                                           | 0.02                                                 |
| APR<br>20... | 2.9                                                     | 40                                            | 3.0                                                 | 0.2                                                | 7.8                                               | 215                                                                | 210                                                            | 0.29                                                | 1880                                              | <0.1                                                          | 0.05                                                 |
| JUN<br>16... | 1.6                                                     | 23                                            | 2.1                                                 | <0.1                                               | 7.4                                               | --                                                                 | 140                                                            | 0.19                                                | 1440                                              | <0.1                                                          | <0.01                                                |
| AUG<br>20... | 0.4                                                     | 41                                            | 3.6                                                 | 0.2                                                | 5.3                                               | 178                                                                | 260                                                            | 0.24                                                | 548                                               | <0.1                                                          | 0.01                                                 |

09209400 GREEN RIVER NEAR LA BARGE, WY--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS NH4) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | SEDI-<br>MENT,<br>SUS-<br>PENDEDED<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDEDED<br>(T/DAY) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|--------------|---------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------|
| OCT<br>03... | 0.02                                                          | 0.03                                                            | --                                                   | 0.5                                                                | 0.02                                        | 0.01                                                 | <0.01                                                          | --                                           | --                                                               | --                                                            |
| DEC<br>01... | 0.05                                                          | 0.06                                                            | 0.12                                                 | 0.2                                                                | 0.01                                        | <0.01                                                | <0.01                                                          | 7                                            | 16                                                               | 95                                                            |
| FEB<br>18... | 0.10                                                          | 0.13                                                            | 0.48                                                 | 0.5                                                                | 0.01                                        | 0.01                                                 | <0.01                                                          | 10                                           | 17                                                               | 97                                                            |
| APR<br>20... | 0.78                                                          | 1.0                                                             | 0.75                                                 | 0.8                                                                | 0.05                                        | 0.03                                                 | 0.01                                                           | 145                                          | 1270                                                             | 86                                                            |
| JUN<br>16... | 0.03                                                          | 0.04                                                            | --                                                   | 1.6                                                                | 0.07                                        | 0.03                                                 | <0.01                                                          | 30                                           | 304                                                              | 93                                                            |
| AUG<br>20... | 0.02                                                          | 0.03                                                            | --                                                   | <0.2                                                               | 0.04                                        | <0.01                                                | <0.01                                                          | 104                                          | 320                                                              | 71                                                            |

| DATE         | TIME | ALUM-<br>INUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AL) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BERYL-<br>LIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BE) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) | COBALT,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CO) | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) |
|--------------|------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|--------------------------------------------|
| OCT<br>03... | 0950 | <10                                                 | 1                                            | 64                                           | <0.5                                                 | 1                                            | <1                                                  | <3                                           | 2                                            | 14                                         | <5                                         |
| FEB<br>18... | 1115 | <10                                                 | <1                                           | 65                                           | 1                                                    | 1                                            | <1                                                  | <3                                           | 1                                            | 18                                         | <5                                         |
| JUN<br>16... | 1345 | 40                                                  | <1                                           | 43                                           | 0.8                                                  | 1                                            | <1                                                  | <3                                           | 1                                            | 79                                         | <5                                         |
| AUG<br>20... | 1240 | <10                                                 | <1                                           | 47                                           | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 2                                            | 12                                         | <5                                         |

| DATE         | LITHIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS LI) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | STRON-<br>TIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SR) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|--------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------------|--------------------------------------------|
| OCT<br>03... | 15                                           | 5                                                    | --                                           | <10                                                   | <1                                           | <1                                                  | <1                                           | 370                                                  | <6                                                 | 8                                          |
| FEB<br>18... | 11                                           | 9                                                    | 0.4                                          | <10                                                   | 1                                            | <1                                                  | <1                                           | 420                                                  | <6                                                 | 7                                          |
| JUN<br>16... | 6                                            | 9                                                    | 0.5                                          | <10                                                   | <1                                           | <1                                                  | <1                                           | 200                                                  | <6                                                 | 10                                         |
| AUG<br>20... | 4                                            | 3                                                    | 0.5                                          | <10                                                   | <1                                           | 1                                                   | <1                                           | 270                                                  | <6                                                 | 8                                          |

## 09210500 FONTENELLE CREEK NEAR HERSCHLER RANCH, NEAR FONTENELLE, WY

LOCATION.--Lat 42°05'46", long 110°24'57", in NW1/4 SW1/4 NE1/4 sec.2, T.24 N., R.115 W., Lincoln County, Hydrologic Unit 14040101, on left bank 2.0 mi downstream from Dutch George Creek and 14 mi west of Fontenelle.

DRAINAGE AREA.--152 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1951 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,950 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May 5, 1970, at site 300 ft downstream at present datum.

REMARKS.--Estimated daily discharges: Nov. 7 to Mar. 14. Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 780 acres upstream from station.

AVERAGE DISCHARGE.--36 years, 76.3 ft<sup>3</sup>/s, 55,280 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 907 ft<sup>3</sup>/s, Apr. 23, 1986, gage height, 9.51 ft; minimum daily, 8.8 ft<sup>3</sup>/s, Aug. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Apr. 7  | 1900 | *392                              | *7.56               | May 21 | 1400 | 174                               | 6.56                |
| Apr. 15 | 2200 | 333                               | 7.29                |        |      |                                   |                     |

Minimum daily discharge, 15 ft<sup>3</sup>/s, Sept. 27-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL   | AUG    | SEP  |
|-------------|-------|-------|------|------|------|------|------|------|------|-------|--------|------|
| 1           | 57    | 50    | 29   | 36   | 26   | 29   | 58   | 147  | 94   | 45    | 30     | 26   |
| 2           | 62    | 46    | 33   | 35   | 25   | 29   | 90   | 139  | 86   | 41    | 29     | 25   |
| 3           | 62    | 49    | 34   | 35   | 24   | 31   | 105  | 126  | 86   | 40    | 28     | 24   |
| 4           | 60    | 48    | 29   | 33   | 26   | 35   | 115  | 124  | 84   | 37    | 28     | 27   |
| 5           | 57    | 48    | 30   | 32   | 28   | 34   | 168  | 121  | 79   | 36    | 27     | 28   |
| 6           | 56    | 49    | 27   | 32   | 26   | 33   | 226  | 122  | 83   | 33    | 27     | 25   |
| 7           | 56    | 42    | 26   | 30   | 28   | 36   | 250  | 117  | 84   | 31    | 26     | 23   |
| 8           | 55    | 40    | 29   | 30   | 28   | 43   | 246  | 122  | 83   | 31    | 26     | 22   |
| 9           | 55    | 41    | 27   | 29   | 28   | 42   | 179  | 124  | 92   | 35    | 26     | 21   |
| 10          | 53    | 46    | 22   | 27   | 27   | 44   | 158  | 127  | 94   | 39    | 26     | 19   |
| 11          | 55    | 49    | 26   | 25   | 27   | 42   | 184  | 135  | 80   | 48    | 26     | 18   |
| 12          | 52    | 50    | 25   | 24   | 27   | 43   | 119  | 142  | 74   | 39    | 27     | 18   |
| 13          | 55    | 50    | 26   | 23   | 26   | 44   | 106  | 135  | 65   | 37    | 26     | 18   |
| 14          | 53    | 52    | 28   | 23   | 25   | 50   | 136  | 134  | 63   | 32    | 27     | 19   |
| 15          | 53    | 46    | 31   | 22   | 29   | 47   | 180  | 131  | 62   | 29    | 42     | 18   |
| 16          | 51    | 43    | 32   | 21   | 26   | 42   | 187  | 134  | 62   | 33    | 35     | 18   |
| 17          | 50    | 44    | 31   | 21   | 31   | 40   | 157  | 138  | 59   | 36    | 30     | 19   |
| 18          | 51    | 43    | 33   | 22   | 30   | 41   | 158  | 152  | 57   | 40    | 28     | 18   |
| 19          | 60    | 46    | 33   | 21   | 28   | 43   | 129  | 149  | 56   | 35    | 27     | 19   |
| 20          | 85    | 43    | 31   | 21   | 29   | 42   | 91   | 149  | 54   | 33    | 27     | 18   |
| 21          | 65    | 43    | 31   | 20   | 34   | 45   | 83   | 163  | 53   | 38    | 26     | 18   |
| 22          | 58    | 41    | 32   | 21   | 31   | 41   | 95   | 144  | 49   | 42    | 28     | 20   |
| 23          | 55    | 33    | 33   | 21   | 30   | 41   | 107  | 129  | 48   | 38    | 31     | 20   |
| 24          | 53    | 36    | 31   | 21   | 30   | 41   | 114  | 120  | 48   | 33    | 38     | 16   |
| 25          | 52    | 38    | 34   | 22   | 29   | 37   | 114  | 123  | 46   | 30    | 44     | 17   |
| 26          | 49    | 29    | 36   | 23   | 33   | 42   | 114  | 125  | 44   | 29    | 37     | 16   |
| 27          | 49    | 32    | 33   | 24   | 31   | 46   | 114  | 118  | 40   | 29    | 31     | 15   |
| 28          | 49    | 29    | 29   | 25   | 31   | 38   | 119  | 115  | 41   | 30    | 30     | 15   |
| 29          | 49    | 33    | 29   | 26   | ---  | 36   | 122  | 107  | 41   | 30    | 29     | 15   |
| 30          | 49    | 29    | 28   | 29   | ---  | 38   | 125  | 104  | 48   | 31    | 27     | 16   |
| 31          | 49    | ---   | 30   | 27   | ---  | 43   | ---  | 99   | ---  | 33    | 26     | ---  |
| TOTAL       | 1715  | 1268  | 928  | 801  | 793  | 1238 | 4149 | 4015 | 1955 | 1093  | 915    | 591  |
| MEAN        | 55.3  | 42.3  | 29.9 | 25.8 | 28.3 | 39.9 | 138  | 130  | 65.2 | 35.3  | 29.5   | 19.7 |
| MAX         | 85    | 52    | 36   | 36   | 34   | 50   | 250  | 163  | 94   | 48    | 44     | 28   |
| MIN         | 49    | 29    | 22   | 20   | 24   | 29   | 58   | 99   | 40   | 29    | 26     | 15   |
| AC-FT       | 3400  | 2520  | 1840 | 1590 | 1570 | 2460 | 8230 | 7960 | 3880 | 2170  | 1810   | 1170 |
| CAL YR 1986 | TOTAL | 57857 |      | MEAN | 159  | MAX  | 865  | MIN  | 22   | AC-FT | 114800 |      |
| WTR YR 1987 | TOTAL | 19461 |      | MEAN | 53.3 | MAX  | 250  | MIN  | 15   | AC-FT | 38600  |      |

## 09211150 FONTENELLE RESERVOIR NEAR FONTENELLE, WY

LOCATION.--Lat 42°02'00", long 110°04'00", in S1/2 sec.25 T.24 N., R.112 W., Lincoln County, Hydrologic Unit 14040101, at dam on Green River, 3.0 mi north of Fontenelle, and 3.5 mi upstream from Slate Creek.

DRAINAGE AREA.--4,280 mi<sup>2</sup>, approximately.

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

REVISED RECORDS.--WSP 2125: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by earthfill dam completed by Bureau of Reclamation in April 1964. Capacity, 344,800 acre-ft between elevations 6,506.0 ft, crest of spillway, and 6,408.0 ft, invert of outlet pipe. Dead storage, below elevation 6,408.0 ft, 563 acre-ft. Figures given herein represent total contents. Water used for irrigation and power development.

COOPERATION.--Records provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 387,000 acre-ft, June 29, 1965, elevation, 6,511.01 ft; minimum daily, 5,680 acre-ft, July 28, 1967, elevation, 6,423.98 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 38,660 acre-ft, Aug. 28, elevation, 6,445.23 ft; minimum daily, 27,960 acre-ft, June 22, elevation, 6,440.45 ft.

CORRECTION.--The change in contents, in acre-feet, for June 30, 1986, has been corrected to +184,440 instead of -184,440 as published in the report for 1986.

## MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| Date                  | Elevation<br>(feet) | Contents<br>(acre-feet) | Change in contents<br>(acre-feet) |
|-----------------------|---------------------|-------------------------|-----------------------------------|
| Sept. 30 . . . . .    | 6,442.90            | 33,260                  | -                                 |
| Oct. 31 . . . . .     | 6,442.38            | 32,060                  | -1,200                            |
| Nov. 30 . . . . .     | 6,442.74            | 32,860                  | +800                              |
| Dec. 31 . . . . .     | 6,443.77            | 35,260                  | +2,400                            |
| CAL YR 1986 . . . . . | -                   | -                       | -700                              |
| Jan. 31 . . . . .     | 6,444.44            | 36,760                  | +1,500                            |
| Feb. 28 . . . . .     | 6,444.08            | 35,960                  | -800                              |
| Mar. 31 . . . . .     | 6,443.97            | 35,660                  | -300                              |
| Apr. 30 . . . . .     | 6,444.37            | 36,560                  | +900                              |
| May 31 . . . . .      | 6,442.91            | 33,260                  | -3,300                            |
| June 30 . . . . .     | 6,441.40            | 29,960                  | -3,300                            |
| July 31 . . . . .     | 6,442.00            | 31,260                  | +1,300                            |
| Aug. 31 . . . . .     | 6,444.91            | 37,860                  | +6,600                            |
| Sept. 30 . . . . .    | 6,442.57            | 32,460                  | -5,400                            |
| WTR YR 1987 . . . . . | -                   | -                       | -800                              |



## 09211200 GREEN RIVER BELOW FONTENELLE RESERVOIR, WY

LOCATION.--Lat 42°01'16", long 110°02'57", in NW1/4 NW1/4 NE1/4 sec.31, T.24 N., R.111 W., Sweetwater County, Hydrologic Unit 14040103, on right bank 1.0 mi downstream from Fontenelle Dam, 2.5 mi upstream from Slate Creek, and 6.0 mi southeast of Fontenelle.

DRAINAGE AREA.--4,280 mi<sup>2</sup>, approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1963 to current year.

REVISED RECORDS.--WSP 2125: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,378.13 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Fontenelle Reservoir 1.0 mi upstream. (See sta 09211150.) Natural flow of stream affected by storage reservoirs and diversions for irrigation of about 202,000 acres upstream from station.

AVERAGE DISCHARGE.--23 years (water years 1965-87), 1,824 ft<sup>3</sup>/s, 1,321,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,400 ft<sup>3</sup>/s, Sept. 5, 1965, gage height, 18.74 ft, from floodmarks, caused by emergency release from Fontenelle Reservoir; minimum daily discharge, 209 ft<sup>3</sup>/s, Nov. 22-24, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,250 ft<sup>3</sup>/s, May 20, gage height, 15.17 ft; minimum daily, 404 ft<sup>3</sup>/s, Dec. 21-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR   | APR    | MAY    | JUN    | JUL    | AUG     | SEP   |
|-------------|-------|---------|-------|-------|-------|-------|--------|--------|--------|--------|---------|-------|
| 1           | 1280  | 1050    | 873   | 427   | 570   | 603   | 751    | 3260   | 4010   | 1400   | 2220    | 1150  |
| 2           | 1260  | 1050    | 873   | 433   | 570   | 603   | 801    | 3810   | 3500   | 1400   | 1910    | 1050  |
| 3           | 1260  | 1050    | 873   | 437   | 571   | 607   | 917    | 4320   | 3010   | 1400   | 1640    | 980   |
| 4           | 1280  | 1050    | 845   | 437   | 578   | 611   | 1250   | 3200   | 2560   | 1410   | 1630    | 980   |
| 5           | 1330  | 1050    | 817   | 437   | 578   | 611   | 1630   | 3250   | 2360   | 1410   | 1630    | 980   |
| 6           | 1320  | 1050    | 817   | 471   | 578   | 617   | 2180   | 2870   | 2140   | 1410   | 1370    | 1010  |
| 7           | 1300  | 1050    | 817   | 494   | 578   | 620   | 3290   | 3300   | 2010   | 1410   | 1240    | 1100  |
| 8           | 1290  | 1050    | 817   | 494   | 578   | 620   | 3780   | 2880   | 2170   | 1340   | 1230    | 1100  |
| 9           | 1210  | 1050    | 817   | 494   | 578   | 616   | 3760   | 2870   | 2510   | 1220   | 1240    | 1080  |
| 10          | 1130  | 1010    | 817   | 494   | 606   | 632   | 3610   | 2880   | 3390   | 1210   | 1100    | 1020  |
| 11          | 1100  | 862     | 736   | 494   | 628   | 688   | 3450   | 3110   | 4870   | 1450   | 1040    | 980   |
| 12          | 1100  | 726     | 520   | 508   | 628   | 715   | 3410   | 3390   | 5720   | 2000   | 1020    | 971   |
| 13          | 1080  | 715     | 417   | 516   | 628   | 715   | 3280   | 3400   | 5500   | 2670   | 1010    | 933   |
| 14          | 1080  | 765     | 468   | 516   | 625   | 715   | 3180   | 3390   | 4670   | 2750   | 1010    | 854   |
| 15          | 1080  | 918     | 501   | 513   | 628   | 715   | 2960   | 3400   | 4340   | 2610   | 1010    | 749   |
| 16          | 1030  | 990     | 501   | 508   | 628   | 742   | 3020   | 3410   | 4010   | 2540   | 1010    | 724   |
| 17          | 980   | 1150    | 486   | 517   | 654   | 798   | 3630   | 3400   | 3530   | 2520   | 1020    | 724   |
| 18          | 980   | 1290    | 462   | 521   | 670   | 845   | 4140   | 3440   | 3580   | 2510   | 1070    | 784   |
| 19          | 1020  | 1290    | 444   | 524   | 670   | 892   | 4400   | 4340   | 3610   | 2510   | 1140    | 902   |
| 20          | 1310  | 1240    | 420   | 517   | 652   | 911   | 4210   | 6380   | 3590   | 2520   | 1140    | 948   |
| 21          | 1410  | 1150    | 404   | 500   | 629   | 892   | 3430   | 6720   | 3120   | 2680   | 1130    | 980   |
| 22          | 1410  | 994     | 404   | 486   | 628   | 856   | 2690   | 6680   | 2630   | 2750   | 1130    | 980   |
| 23          | 1410  | 920     | 404   | 486   | 622   | 845   | 2470   | 6400   | 2030   | 2770   | 1130    | 980   |
| 24          | 1370  | 863     | 404   | 486   | 620   | 837   | 2460   | 5620   | 1610   | 2790   | 1130    | 980   |
| 25          | 1280  | 826     | 404   | 486   | 613   | 835   | 2450   | 4730   | 1620   | 2790   | 1180    | 973   |
| 26          | 1230  | 932     | 404   | 486   | 607   | 831   | 2460   | 4570   | 1620   | 2840   | 1210    | 829   |
| 27          | 1190  | 1000    | 404   | 509   | 603   | 827   | 2460   | 4550   | 1620   | 2940   | 1330    | 724   |
| 28          | 1160  | 929     | 404   | 531   | 603   | 834   | 2540   | 4400   | 1500   | 2810   | 1410    | 724   |
| 29          | 1100  | 873     | 404   | 555   | ---   | 826   | 2870   | 4460   | 1420   | 2430   | 1400    | 717   |
| 30          | 1060  | 873     | 411   | 570   | ---   | 808   | 3070   | 4540   | 1410   | 2430   | 1390    | 705   |
| 31          | 1050  | ---     | 424   | 570   | ---   | 767   | ---    | 4380   | ---    | 2430   | 1280    | ---   |
| TOTAL       | 37090 | 29766   | 17792 | 15417 | 17121 | 23034 | 84549  | 127350 | 89660  | 67350  | 39400   | 27611 |
| MEAN        | 1196  | 992     | 574   | 497   | 611   | 743   | 2818   | 4108   | 2989   | 2173   | 1271    | 920   |
| MAX         | 1410  | 1290    | 873   | 570   | 670   | 911   | 4400   | 6720   | 5720   | 2940   | 2220    | 1150  |
| MIN         | 980   | 715     | 404   | 427   | 570   | 603   | 751    | 2870   | 1410   | 1210   | 1010    | 705   |
| AC-FT       | 73570 | 59040   | 35290 | 30580 | 33960 | 45690 | 167700 | 252600 | 177800 | 133600 | 78150   | 54770 |
| CAL YR 1986 | TOTAL | 1128864 |       | MEAN  | 3093  | MAX   | 13500  | MIN    | 404    | AC-FT  | 2239000 |       |
| WTR YR 1987 | TOTAL | 576140  |       | MEAN  | 1578  | MAX   | 6720   | MIN    | 404    | AC-FT  | 1143000 |       |

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to September 1976.

WATER TEMPERATURES: October 1967 to September 1976.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>LAB<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO |
|-------|------|-------------------------------------------------|----------------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|
| OCT   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |
| 02... | 1255 | 1260                                            | 430                                                      | 8.0                                  | 190                                    | 50                                           | 16                                                   | 20                                           | 0.7                                     |
| NOV   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |
| 12... | 1445 | 722                                             | 576                                                      | 3.5                                  | 240                                    | 62                                           | 20                                                   | 32                                           | 0.9                                     |
| DEC   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |
| 15... | 1330 | 515                                             | 573                                                      | 2.0                                  | 240                                    | 65                                           | 20                                                   | 33                                           | 1                                       |
| JAN   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |
| 28... | 1500 | 527                                             | 624                                                      | 2.5                                  | 250                                    | 65                                           | 22                                                   | 34                                           | 1                                       |
| MAR   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |
| 03... | 1400 | 617                                             | 478                                                      | 2.0                                  | 220                                    | 61                                           | 17                                                   | 17                                           | 0.5                                     |
| MAY   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |
| 12... | 1905 | 3390                                            | 275                                                      | 14.5                                 | 120                                    | 33                                           | 10                                                   | 8.9                                          | 0.4                                     |
| 27... | 1030 | 3500                                            | --                                                       | 11.5                                 | --                                     | --                                           | --                                                   | --                                           | --                                      |
| JUN   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |
| 16... | 1635 | 3520                                            | 275                                                      | 19.0                                 | 110                                    | 28                                           | 9.2                                                  | 12                                           | 0.5                                     |
| JUL   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |
| 06... | 1400 | 1430                                            | 344                                                      | 19.0                                 | 140                                    | 36                                           | 12                                                   | 19                                           | 0.7                                     |
| 30... | 1440 | 2530                                            | --                                                       | 20.0                                 | --                                     | --                                           | --                                                   | --                                           | --                                      |
| AUG   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |
| 20... | 1030 | 1170                                            | 342                                                      | 17.0                                 | 140                                    | 39                                           | 11                                                   | 17                                           | 0.6                                     |
| SEP   |      |                                                 |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |
| 02... | 1240 | 965                                             | 369                                                      | 18.0                                 | 150                                    | 41                                           | 12                                                   | 21                                           | 0.8                                     |
| 29... | 1645 | 724                                             | --                                                       | 13.0                                 | --                                     | --                                           | --                                                   | --                                           | --                                      |

[illegible]

09211200 GREEN RIVER BELOW FONTENELLE RESERVOIR, NEAR FONTENELLE, WY--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) |
|--------------|---------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------|----------------------------------------------------------------|
| OCT<br>02... | --                                                            | 0.1                                                           | --                                                   | --                                                            | --                                                   | --                                                                 | --                                          | 0.02                                                 | --                                                             |
| NOV<br>12... | --                                                            | 0.2                                                           | --                                                   | --                                                            | --                                                   | --                                                                 | --                                          | 0.02                                                 | --                                                             |
| DEC<br>15... | --                                                            | 0.1                                                           | --                                                   | --                                                            | --                                                   | --                                                                 | 0.01                                        | --                                                   | --                                                             |
| JAN<br>28... | --                                                            | 0.8                                                           | --                                                   | --                                                            | --                                                   | --                                                                 | 0.01                                        | <0.1                                                 | --                                                             |
| MAR<br>03... | --                                                            | 0.1                                                           | --                                                   | --                                                            | --                                                   | --                                                                 | 0.02                                        | <0.1                                                 | --                                                             |
| MAY<br>12... | --                                                            | <0.1                                                          | --                                                   | --                                                            | --                                                   | --                                                                 | 0.08                                        | --                                                   | --                                                             |
| 27...        | <0.01                                                         | <0.1                                                          | 0.02                                                 | 0.21                                                          | 1.4                                                  | 1.4                                                                | 0.06                                        | 0.05                                                 | 0.03                                                           |
| JUN<br>16... | <0.01                                                         | <0.2                                                          | <0.01                                                | 0.02                                                          | --                                                   | 0.2                                                                | 0.03                                        | 0.03                                                 | <0.01                                                          |
| JUL<br>06... | <0.01                                                         | 1.1                                                           | 0.02                                                 | 0.02                                                          | 1.5                                                  | 1.5                                                                | 0.02                                        | 0.02                                                 | <0.01                                                          |
| 30...        | <0.01                                                         | <0.1                                                          | <0.01                                                | <0.23                                                         | --                                                   | 0.5                                                                | 0.02                                        | 0.06                                                 | <0.01                                                          |
| AUG<br>20... | <0.01                                                         | 0.1                                                           | <0.01                                                | 0.03                                                          | --                                                   | 0.4                                                                | 0.02                                        | 0.03                                                 | <0.01                                                          |
| SEP<br>02... | <0.01                                                         | <0.1                                                          | <0.01                                                | 0.03                                                          | --                                                   | <0.2                                                               | 0.02                                        | <0.01                                                | <0.01                                                          |
| 29...        | <0.01                                                         | <0.1                                                          | 0.01                                                 | 0.01                                                          | 0.39                                                 | 0.4                                                                | <0.01                                       | <0.01                                                | 0.02                                                           |

## 09212500 BIG SANDY RIVER AT LECKIE RANCH, NEAR BIG SANDY, WY

LOCATION.--Lat 42°34'17", long 109°16'58", in sec.17, T.30 N., R.104 W., Sublette County, Hydrologic Unit 14040104, on left bank at Leckie Ranch, 0.1 mi downstream from Squaw Creek, and 10.1 mi southeast of Big Sandy.

DRAINAGE AREA.--94 mi<sup>2</sup>.

PERIOD OF RECORD.--July to November 1910, May to August 1911, July 1939 to September 1987 (no winter records since 1971, discontinued). Monthly discharge only for some periods, published in WSP 1313. Published as Big Sandy Creek near Big Sandy 1910-11 and in WSP 618, and as Big Sandy Creek at Leckie Ranch, near Big Sandy July 1939 to October 1968.

REVISED RECORDS.--WSP 2125: 1963, 1964(P), 1965.

GAGE.--Water-stage recorder. Elevation of gage is 7,800 ft above National Geodetic Vertical Datum of 1929, by barometer. See WSP 1733 for history of changes prior to July 24, 1939. July 24, 1939, to June 1, 1961, water-stage recorder at site 75 ft downstream at present datum.

REMARKS.--Estimated daily discharges: Apr. 4-11, May 18 to June 1, and Aug. 15-31. Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 750 acres upstream from station. Results of discharge measurements, in cubic feet per second, made during the period when station was not in operation, are given below:

Oct. 1 . . 39.8  
Mar. 23 . . 13.7

AVERAGE DISCHARGE.--32 years (water years 1940-71), 86.0 ft<sup>3</sup>/s, 62,310 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,670 ft<sup>3</sup>/s, June 2, 1986, gage height, 9.06 ft; minimum daily, 3.0 ft<sup>3</sup>/s, Dec. 17, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time    | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|---------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| May 18 | Unknown | *838                              | a*7.45              | June 10 | 0500 | 724                               | 7.15                |

a From floodmark.

Minimum daily discharge during period of operation, 14 ft<sup>3</sup>/s, Apr. 1-3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR  | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|------|-------|-------|------|------|------|
| 1     |     |     |     |     |     |     | 14   | 316   | 283   | 127  | 61   | 37   |
| 2     |     |     |     |     |     |     | 14   | 271   | 233   | 116  | 57   | 36   |
| 3     |     |     |     |     |     |     | 14   | 191   | 201   | 108  | 53   | 35   |
| 4     |     |     |     |     |     |     | 16   | 181   | 196   | 106  | 48   | 66   |
| 5     |     |     |     |     |     |     | 18   | 210   | 223   | 100  | 45   | 66   |
| 6     |     |     |     |     |     |     | 20   | 254   | 255   | 91   | 43   | 52   |
| 7     |     |     |     |     |     |     | 23   | 286   | 290   | 83   | 42   | 43   |
| 8     |     |     |     |     |     |     | 35   | 301   | 400   | 77   | 43   | 40   |
| 9     |     |     |     |     |     |     | 40   | 263   | 533   | 85   | 39   | 38   |
| 10    |     |     |     |     |     |     | 35   | 286   | 620   | 113  | 36   | 36   |
| 11    |     |     |     |     |     |     | 31   | 257   | 415   | 304  | 36   | 35   |
| 12    |     |     |     |     |     |     | 31   | 278   | 371   | 212  | 34   | 34   |
| 13    |     |     |     |     |     |     | 31   | 325   | 346   | 162  | 30   | 33   |
| 14    |     |     |     |     |     |     | 40   | 313   | 320   | 136  | 34   | 33   |
| 15    |     |     |     |     |     |     | 95   | 349   | 282   | 118  | 40   | 32   |
| 16    |     |     |     |     |     |     | 101  | 370   | 285   | 106  | 64   | 31   |
| 17    |     |     |     |     |     |     | 78   | 455   | 245   | 114  | 56   | 30   |
| 18    |     |     |     |     |     |     | 86   | 700   | 212   | 169  | 50   | 30   |
| 19    |     |     |     |     |     |     | 71   | 580   | 189   | 148  | 43   | 30   |
| 20    |     |     |     |     |     |     | 50   | 450   | 173   | 123  | 39   | 29   |
| 21    |     |     |     |     |     |     | 56   | 410   | 163   | 116  | 35   | 28   |
| 22    |     |     |     |     |     |     | 76   | 350   | 155   | 163  | 33   | 27   |
| 23    |     |     |     |     |     |     | 104  | 300   | 143   | 132  | 50   | 27   |
| 24    |     |     |     |     |     |     | 137  | 240   | 132   | 110  | 100  | 26   |
| 25    |     |     |     |     |     |     | 184  | 250   | 123   | 99   | 86   | 25   |
| 26    |     |     |     |     |     |     | 219  | 240   | 117   | 93   | 80   | 25   |
| 27    |     |     |     |     |     |     | 267  | 260   | 111   | 84   | 70   | 25   |
| 28    |     |     |     |     |     |     | 291  | 280   | 107   | 78   | 60   | 24   |
| 29    |     |     |     |     |     |     | 282  | 320   | 117   | 76   | 52   | 24   |
| 30    |     |     |     |     |     |     | 288  | 320   | 155   | 72   | 47   | 24   |
| 31    |     |     |     |     |     |     | ---  | 320   | ---   | 67   | 42   | ---  |
| TOTAL |     |     |     |     |     |     | 2747 | 9926  | 7395  | 3688 | 1548 | 1021 |
| MEAN  |     |     |     |     |     |     | 91.6 | 320   | 247   | 119  | 49.9 | 34.0 |
| MAX   |     |     |     |     |     |     | 291  | 700   | 620   | 304  | 100  | 66   |
| MIN   |     |     |     |     |     |     | 14   | 181   | 107   | 67   | 30   | 24   |
| AC-FT |     |     |     |     |     |     | 5450 | 19690 | 14670 | 7320 | 3070 | 2030 |

## 09213500 BIG SANDY RIVER NEAR FARSON, WY

LOCATION.--Lat 42°19'01", long 109°29'06", in NW1/4 SE1/4 NW1/4 sec.17, T.27 N., R.106 W., Sublette County, Hydrologic Unit 14040104, on left upstream side of Eden Canal diversion, about 1.0 mi upstream from high-water line of Big Sandy Reservoir, 14.5 mi north of Farson, and 24.5 mi upstream from Little Sandy Creek.

DRAINAGE AREA.--322 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1914 to September 1917, October 1920 to October 1924, October 1926 to September 1934, April 1953 to current year (no winter records since 1971). Prior to October 1968, published as Big Sandy Creek near Farson. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1733: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 6,770 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Apr. 28, 1921, nonrecording gage, and Apr. 28, 1921, to Aug. 3, 1934, water-stage recorder at site 0.5 mi upstream at different datum. Apr. 17, 1953, to Nov. 11, 1954, water-stage recorder at site 1.5 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Apr. 1-14, and Apr. 28 to May 12. Records good except those for estimated daily discharges, which are poor. Diversions for irrigation of about 1,000 acres upstream from station. The Eden Canal, which bypasses the station, has not been used since station was established at present site in November 1954. Results of discharge measurements, in cubic feet per second, made during the period when station was not in operation are given below:

Oct. 3 . . . 44.2  
Mar. 30 . . . 21.0

AVERAGE DISCHARGE.--33 years (water years 1915-17, 1921-24, 1927-34, 1954-71), 86.5 ft<sup>3</sup>/s, 62,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,890 ft<sup>3</sup>/s, June 3, 1986, gage height, 8.46 ft; no flow Jan. 27-31, 1963, and may have also reached no flow in previous years during periods of ice effect.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| May 19 | 0800 | *811                              | *7.19               | June 10 | 2200 | 698                               | 6.97                |
| May 30 | 2300 | 389                               | 6.02                |         |      |                                   |                     |

Minimum daily discharge during period of operation, 21 ft<sup>3</sup>/s, Apr. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR  | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|------|-------|-------|------|------|------|
| 1     |     |     |     |     |     |     | 21   | 240   | 330   | 149  | 73   | 47   |
| 2     |     |     |     |     |     |     | 21   | 270   | 284   | 130  | 65   | 44   |
| 3     |     |     |     |     |     |     | 22   | 230   | 232   | 118  | 60   | 40   |
| 4     |     |     |     |     |     |     | 24   | 200   | 204   | 111  | 55   | 44   |
| 5     |     |     |     |     |     |     | 26   | 180   | 202   | 104  | 52   | 49   |
| 6     |     |     |     |     |     |     | 30   | 210   | 238   | 98   | 48   | 65   |
| 7     |     |     |     |     |     |     | 40   | 240   | 270   | 93   | 47   | 58   |
| 8     |     |     |     |     |     |     | 45   | 270   | 348   | 87   | 46   | 51   |
| 9     |     |     |     |     |     |     | 39   | 300   | 507   | 82   | 44   | 45   |
| 10    |     |     |     |     |     |     | 35   | 270   | 634   | 82   | 43   | 41   |
| 11    |     |     |     |     |     |     | 30   | 250   | 548   | 98   | 40   | 39   |
| 12    |     |     |     |     |     |     | 33   | 250   | 460   | 264  | 38   | 37   |
| 13    |     |     |     |     |     |     | 40   | 274   | 407   | 216  | 35   | 35   |
| 14    |     |     |     |     |     |     | 50   | 318   | 377   | 164  | 34   | 34   |
| 15    |     |     |     |     |     |     | 86   | 322   | 342   | 135  | 39   | 33   |
| 16    |     |     |     |     |     |     | 97   | 379   | 294   | 117  | 49   | 33   |
| 17    |     |     |     |     |     |     | 142  | 516   | 291   | 124  | 68   | 31   |
| 18    |     |     |     |     |     |     | 115  | 524   | 252   | 200  | 59   | 31   |
| 19    |     |     |     |     |     |     | 115  | 717   | 219   | 160  | 49   | 30   |
| 20    |     |     |     |     |     |     | 110  | 552   | 196   | 150  | 44   | 29   |
| 21    |     |     |     |     |     |     | 81   | 490   | 179   | 128  | 39   | 29   |
| 22    |     |     |     |     |     |     | 64   | 436   | 166   | 118  | 35   | 29   |
| 23    |     |     |     |     |     |     | 75   | 357   | 157   | 149  | 34   | 29   |
| 24    |     |     |     |     |     |     | 93   | 288   | 148   | 132  | 87   | 28   |
| 25    |     |     |     |     |     |     | 122  | 252   | 135   | 110  | 99   | 27   |
| 26    |     |     |     |     |     |     | 169  | 256   | 125   | 101  | 100  | 26   |
| 27    |     |     |     |     |     |     | 214  | 246   | 116   | 94   | 91   | 25   |
| 28    |     |     |     |     |     |     | 240  | 283   | 111   | 87   | 77   | 25   |
| 29    |     |     |     |     |     |     | 265  | 297   | 108   | 83   | 67   | 25   |
| 30    |     |     |     |     |     |     | 250  | 337   | 113   | 79   | 58   | 25   |
| 31    |     |     |     |     |     |     | ---  | 334   | ---   | 79   | 52   | ---  |
| TOTAL |     |     |     |     |     |     | 2694 | 10088 | 7993  | 3842 | 1727 | 1084 |
| MEAN  |     |     |     |     |     |     | 89.8 | 325   | 266   | 124  | 55.7 | 36.1 |
| MAX   |     |     |     |     |     |     | 265  | 717   | 634   | 264  | 100  | 65   |
| MIN   |     |     |     |     |     |     | 21   | 180   | 108   | 79   | 34   | 25   |
| AC-FT |     |     |     |     |     |     | 5340 | 20010 | 15850 | 7620 | 3430 | 2150 |

## 09213700 BIG SANDY RESERVOIR NEAR FARSON, WY

LOCATION.--Lat 42°14'57", long 109°25'43", in NE1/4 NW1/4 NW1/4 sec.11, T.26 N., R.106 W., Sweetwater County, Hydrologic Unit 14040104, 10.1 mi north of Farson and 20.5 mi upstream from Little Sandy Creek.

DRAINAGE AREA.--386 mi<sup>2</sup>.

PERIOD OF RECORD.--May to September 1987.

GAGE.--Water-stage recorder. Datum of gage is 6,770.00 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by an earthfill dam, storage began in April 1953. Total capacity, 54,385 acre-ft at elevation 6,762.8 ft, crest of spillway, including 1,425 acre-ft of dead storage in a permanent pool at elevation 6,720.0, trash-rack sill. Reservoir is used for storage of irrigation water and for recreation. Figures given herein represent active storage. Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 39,700 acre-ft, May 20, elevation, 6,758.02 ft; minimum contents, 21,200 acre-ft, Sept. 14-17; minimum elevation, 6,749.47 ft, Sept. 15-16.

Capacity table (elevation, in feet,  
and contents, in acre-feet)

|       |        |       |        |
|-------|--------|-------|--------|
| 6,745 | 14,065 | 6,755 | 32,355 |
| 6,750 | 22,155 | 6,760 | 44,905 |

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
INSTANTANEOUS OBSERVATIONS AT 2400

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY      | JUN      | JUL      | AUG      | SEP      |
|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|----------|
| 1   |     |     |     |     |     |     |     | 37500    | 38400    | 33700    | 33000    | 22800    |
| 2   |     |     |     |     |     |     |     | 37400    | 38300    | 33500    | 32500    | 22600    |
| 3   |     |     |     |     |     |     |     | 37300    | 38000    | 33500    | 32100    | 22500    |
| 4   |     |     |     |     |     |     |     | 37200    | 37600    | 33500    | 31600    | 22400    |
| 5   |     |     |     |     |     |     |     | 37100    | 37200    | 33400    | 31000    | 22400    |
| 6   |     |     |     |     |     |     |     | 37200    | 36900    | 33400    | 30500    | 22400    |
| 7   |     |     |     |     |     |     |     | 37600    | 36600    | 33300    | 29900    | 22400    |
| 8   |     |     |     |     |     |     |     | 37900    | 36600    | 33200    | 29400    | 22300    |
| 9   |     |     |     |     |     |     |     | 38200    | 37000    | 33100    | 29000    | 22100    |
| 10  |     |     |     |     |     |     |     | 38500    | 37800    | 33100    | 28500    | 22000    |
| 11  |     |     |     |     |     |     |     | 38800    | 38300    | 33200    | 28000    | 21800    |
| 12  |     |     |     |     |     |     |     | 38700    | 38400    | 33500    | 27500    | 21600    |
| 13  |     |     |     |     |     |     |     | 38800    | 38300    | 34000    | 27100    | 21400    |
| 14  |     |     |     |     |     |     |     | 38800    | 38100    | 34300    | 26700    | 21200    |
| 15  |     |     |     |     |     |     |     | 38800    | 38000    | 34500    | 26300    | 21200    |
| 16  |     |     |     |     |     |     |     | 38800    | 37800    | 34600    | 26000    | 21200    |
| 17  |     |     |     |     |     |     |     | 39000    | 37600    | 34500    | 25700    | 21200    |
| 18  |     |     |     |     |     |     |     | 39300    | 37200    | 34700    | 25500    | 21300    |
| 19  |     |     |     |     |     |     |     | 39600    | 36900    | 34800    | 25300    | 21300    |
| 20  |     |     |     |     |     |     |     | 39700    | 36600    | 34800    | 25100    | 21400    |
| 21  |     |     |     |     |     |     |     | 39400    | 36300    | 34800    | 24800    | 21400    |
| 22  |     |     |     |     |     |     |     | 39200    | 35900    | 34900    | 24500    | 21500    |
| 23  |     |     |     |     |     |     |     | 39000    | 35600    | 34900    | 24100    | 21500    |
| 24  |     |     |     |     |     |     |     | 38800    | 35300    | 34800    | 23800    | 21500    |
| 25  |     |     |     |     |     |     |     | 38600    | 35200    | 34700    | 23600    | 21500    |
| 26  |     |     |     |     |     |     |     | 38300    | 34900    | 34700    | 23400    | 21500    |
| 27  |     |     |     |     |     |     |     | 38300    | 34700    | 34500    | 23300    | 21500    |
| 28  |     |     |     |     |     |     |     | 38200    | 34400    | 34300    | 23200    | 21500    |
| 29  |     |     |     |     |     |     |     | 38200    | 34100    | 34000    | 23100    | 21500    |
| 30  |     |     |     |     |     |     |     | 38200    | 33800    | 33700    | 23000    | 21600    |
| 31  |     |     |     |     |     |     |     | 38500    | ---      | 33300    | 22900    | ---      |
| MAX |     |     |     |     |     |     |     | 39700    | 38400    | 34900    | 33000    | 22800    |
| MIN |     |     |     |     |     |     |     | 37100    | 33800    | 33100    | 22900    | 21200    |
| (+) |     |     |     |     |     |     |     | 6,757.55 | 6,755.64 | 6,755.41 | 6,750.39 | 6,749.69 |
| (±) |     |     |     |     |     |     |     | --       | -4,700   | -500     | -10,400  | -1,300   |

(+) Elevation, in feet, at end of month.

(±) Change in contents, in acre-feet.



## 09215550 BIG SANDY RIVER BELOW FARSON, WY

LOCATION.--Lat 42°04'24", long 109°28'43", in SW1/4 SE1/4 NE1/4 sec.12, T.24 N., R.107 W., Sweetwater County, Hydrologic Unit 14040104, on left bank 2.7 mi northwest of Eden, 3.0 mi southwest of Farson, and 3.8 mi downstream from Little Sandy Creek.

DRAINAGE AREA.--1,097 mi<sup>2</sup>, of which 14.9 mi<sup>2</sup> is probably noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1981 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,520 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 21 to Apr. 6 and Sept. 26-29. Records good except those for estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs and diversions for irrigation of about 19,300 acres upstream from station.

AVERAGE DISCHARGE.--6 years, 65.8 ft<sup>3</sup>/s, 47,670 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,120 ft<sup>3</sup>/s, Apr. 3, 1985, gage height, 7.30 ft; maximum gage height, 7.71 ft, Apr. 3, 1985 (backwater from ice); minimum daily discharge, 5.0 ft<sup>3</sup>/s, Feb. 18, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 284 ft<sup>3</sup>/s, May 21, gage height, 3.78 ft; maximum gage height, 5.43 ft, Apr. 5 (backwater from ice); minimum daily discharge, 5.0 ft<sup>3</sup>/s, Jan. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN   | FEB   | MAR    | APR  | MAY  | JUN  | JUL   | AUG   | SEP  |
|-------------|-------|---------|------|-------|-------|--------|------|------|------|-------|-------|------|
| 1           | 44    | 36      | 17   | 12    | 6.0   | 8.0    | 60   | 19   | 67   | 61    | 50    | 39   |
| 2           | 44    | 34      | 18   | 13    | 6.5   | 10     | 70   | 21   | 65   | 63    | 49    | 37   |
| 3           | 46    | 33      | 18   | 13    | 7.0   | 15     | 100  | 21   | 63   | 62    | 50    | 34   |
| 4           | 44    | 33      | 18   | 13    | 6.5   | 20     | 140  | 20   | 51   | 68    | 49    | 44   |
| 5           | 42    | 33      | 19   | 14    | 6.0   | 30     | 190  | 20   | 50   | 63    | 46    | 43   |
| 6           | 39    | 35      | 17   | 15    | 6.0   | 40     | 180  | 20   | 51   | 61    | 48    | 42   |
| 7           | 37    | 37      | 17   | 13    | 6.0   | 70     | 143  | 20   | 54   | 50    | 51    | 40   |
| 8           | 38    | 36      | 16   | 10    | 6.0   | 160    | 115  | 20   | 69   | 48    | 50    | 40   |
| 9           | 39    | 26      | 14   | 8.0   | 6.0   | 145    | 79   | 20   | 83   | 52    | 50    | 37   |
| 10          | 41    | 33      | 13   | 6.0   | 6.4   | 110    | 62   | 21   | 78   | 61    | 51    | 36   |
| 11          | 39    | 40      | 14   | 7.0   | 7.0   | 90     | 50   | 23   | 69   | 71    | 52    | 34   |
| 12          | 37    | 39      | 15   | 7.0   | 7.0   | 90     | 38   | 41   | 69   | 60    | 50    | 37   |
| 13          | 39    | 41      | 15   | 7.0   | 6.7   | 100    | 36   | 59   | 71   | 59    | 50    | 40   |
| 14          | 39    | 43      | 17   | 7.0   | 6.5   | 95     | 33   | 58   | 64   | 53    | 47    | 41   |
| 15          | 38    | 44      | 17   | 7.0   | 6.5   | 100    | 32   | 57   | 55   | 49    | 54    | 41   |
| 16          | 38    | 40      | 17   | 7.0   | 6.5   | 95     | 30   | 58   | 48   | 43    | 55    | 36   |
| 17          | 40    | 40      | 17   | 5.5   | 6.5   | 90     | 29   | 63   | 47   | 49    | 49    | 31   |
| 18          | 42    | 37      | 16   | 5.0   | 6.5   | 86     | 28   | 96   | 49   | 56    | 44    | 28   |
| 19          | 42    | 38      | 15   | 5.5   | 6.5   | 83     | 27   | 143  | 47   | 59    | 43    | 28   |
| 20          | 43    | 32      | 16   | 5.2   | 6.5   | 80     | 27   | 227  | 51   | 54    | 40    | 28   |
| 21          | 42    | 30      | 16   | 5.2   | 6.5   | 76     | 27   | 273  | 56   | 52    | 41    | 28   |
| 22          | 48    | 30      | 16   | 5.2   | 6.5   | 73     | 26   | 243  | 64   | 55    | 42    | 28   |
| 23          | 49    | 28      | 16   | 5.2   | 6.5   | 70     | 24   | 205  | 59   | 50    | 43    | 28   |
| 24          | 46    | 30      | 16   | 5.2   | 6.5   | 66     | 23   | 161  | 57   | 46    | 45    | 27   |
| 25          | 45    | 25      | 16   | 5.2   | 6.3   | 63     | 23   | 131  | 64   | 41    | 49    | 27   |
| 26          | 42    | 15      | 16   | 5.2   | 6.3   | 60     | 22   | 107  | 66   | 43    | 51    | 26   |
| 27          | 41    | 18      | 16   | 5.5   | 6.3   | 57     | 22   | 83   | 54   | 44    | 56    | 25   |
| 28          | 40    | 22      | 16   | 6.0   | 6.3   | 55     | 22   | 69   | 55   | 44    | 53    | 25   |
| 29          | 40    | 23      | 15   | 5.7   | ---   | 60     | 22   | 73   | 59   | 48    | 43    | 24   |
| 30          | 38    | 21      | 13   | 5.5   | ---   | 65     | 21   | 74   | 59   | 52    | 40    | 23   |
| 31          | 38    | ---     | 12   | 5.7   | ---   | 65     | ---  | 68   | ---  | 53    | 40    | ---  |
| TOTAL       | 1280  | 972     | 494  | 239.8 | 179.8 | 2227.0 | 1701 | 2514 | 1794 | 1670  | 1481  | 997  |
| MEAN        | 41.3  | 32.4    | 15.9 | 7.74  | 6.42  | 71.8   | 56.7 | 81.1 | 59.8 | 53.9  | 47.8  | 33.2 |
| MAX         | 49    | 44      | 19   | 15    | 7.0   | 160    | 190  | 273  | 83   | 71    | 56    | 44   |
| MIN         | 37    | 15      | 12   | 5.0   | 6.0   | 8.0    | 21   | 19   | 47   | 41    | 40    | 23   |
| AC-FT       | 2540  | 1930    | 980  | 476   | 357   | 4420   | 3370 | 4990 | 3560 | 3310  | 2940  | 1980 |
| CAL YR 1986 | TOTAL | 36001.5 |      | MEAN  | 98.6  | MAX    | 897  | MIN  | 5.4  | AC-FT | 71410 |      |
| WTR YR 1987 | TOTAL | 15549.6 |      | MEAN  | 42.6  | MAX    | 273  | MIN  | 5.0  | AC-FT | 30840 |      |

09215550 BIG SANDY RIVER BELOW FARSON, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1982 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1981 to September 1986.

WATER TEMPERATURES: December 1981 to September 1986.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>LAB<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) |
|-------|------|-------------------------------------------------|---------------------------------------------------|----------------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|
| NOV   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 14... | 1355 | 42                                              | --                                                | 2140                                                     | 1.0                                  | 620                                    | 160                                          | 53                                                   | 280                                          | 5                                       | 2.0                                                 |
| 26... | 0900 | 32                                              | --                                                | 2340                                                     | 0.0                                  | 630                                    | 160                                          | 57                                                   | 310                                          | 6                                       | 2.3                                                 |
| DEC   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 16... | 1545 | 17                                              | --                                                | 2260                                                     | 0.0                                  | 670                                    | 170                                          | 60                                                   | 290                                          | 5                                       | 2.7                                                 |
| JAN   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 26... | 1245 | 5.8                                             |                                                   | 2350                                                     | 0.0                                  | 790                                    | 210                                          | 64                                                   | 250                                          | 4                                       | 2.7                                                 |
| MAR   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 02... | 1345 | 10                                              |                                                   | 2650                                                     | 0.0                                  | 720                                    | 190                                          | 59                                                   | 280                                          | 5                                       | 2.8                                                 |
| APR   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 20... | 1115 | 27                                              |                                                   | 2900                                                     | 4.0                                  | 710                                    | 170                                          | 69                                                   | 430                                          | 7                                       | 3.5                                                 |
| JUN   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 16... | 1950 | 50                                              | --                                                | 2010                                                     | 20.0                                 | 470                                    | 110                                          | 48                                                   | 290                                          | 6                                       | 3.4                                                 |
| JUL   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 06... | 1215 | 56                                              |                                                   | 1320                                                     | 18.0                                 | 370                                    | 94                                           | 34                                                   | 160                                          | 4                                       | 2.6                                                 |
| AUG   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 17... | 1420 | 49                                              |                                                   | 1550                                                     | 17.0                                 | 490                                    | 130                                          | 40                                                   | 220                                          | 4                                       | 2.9                                                 |
| SEP   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 29... | 1145 | 23                                              |                                                   | 2270                                                     | 14.0                                 | 680                                    | 180                                          | 57                                                   | 320                                          | 6                                       | 3.2                                                 |

| DATE  | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|-------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|
| NOV   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |
| 14... | 220                                             | 870                                           | 40                                                  | 0.6                                                | 13                                                | 1600                                                           | 2.1                                                 | 176                                               | 0.5                                                           | --                                          |
| 26... | 250                                             | 950                                           | 43                                                  | 0.7                                                | 13                                                | 1700                                                           | 2.3                                                 | 146                                               | 0.6                                                           | --                                          |
| DEC   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |
| 16... | 210                                             | 1000                                          | 40                                                  | 0.8                                                | 12                                                | 1700                                                           | 2.3                                                 | 78                                                | 0.8                                                           | 0.02                                        |
| JAN   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |
| 26... | 220                                             | 1000                                          | 35                                                  | 0.7                                                | 12                                                | 1700                                                           | 2.3                                                 | 27                                                | 1.4                                                           | 0.06                                        |
| MAR   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |
| 02... | 210                                             | 1000                                          | 36                                                  | 0.6                                                | 15                                                | 1700                                                           | 2.3                                                 | 46                                                | 0.6                                                           | 0.02                                        |
| APR   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |
| 20... | 260                                             | 1200                                          | 55                                                  | 0.8                                                | 10                                                | 2100                                                           | 2.8                                                 | 153                                               | 0.2                                                           | 0.09                                        |
| JUN   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |
| 16... | 210                                             | 790                                           | 42                                                  | 0.6                                                | 11                                                | 1400                                                           | 1.9                                                 | 192                                               | 0.1                                                           | 0.06                                        |
| JUL   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |
| 06... | 160                                             | 530                                           | 24                                                  | 0.5                                                | 10                                                | 950                                                            | 1.3                                                 | 144                                               | 0.2                                                           | --                                          |
| AUG   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |
| 17... | 200                                             | 720                                           | 36                                                  | 0.6                                                | 9.7                                               | 1300                                                           | 1.7                                                 | 169                                               | 0.3                                                           | 0.15                                        |
| SEP   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |
| 29... | 220                                             | 1000                                          | 41                                                  | 0.7                                                | 10                                                | 1700                                                           | 2.4                                                 | 109                                               | 0.4                                                           | 0.02                                        |

## 09216050 BIG SANDY RIVER AT GASSON BRIDGE, NEAR EDEN, WY

LOCATION.--Lat 41°56'43", long 109°41'04", in NE1/4 SW1/4 NW1/4 sec.29, T.23 N., R.108 W., Sweetwater County, Hydrologic Unit 14040104, on left bank 0.2 mi upstream from Gasson Bridge and 14.5 mi southwest of Eden.

DRAINAGE AREA.--1,720 mi<sup>2</sup>, approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1972 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,350 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 10 to Mar. 6 and Mar. 29. Records good except those for December to March, which are poor. Natural flow of stream affected by storage reservoirs and diversions for irrigation of about 19,300 acres upstream from station.

AVERAGE DISCHARGE.--15 years, 84.7 ft<sup>3</sup>/s, 61,370 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,430 ft<sup>3</sup>/s, Apr. 24, 1980, gage height, 10.58 ft, from rating curve extended above 2,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily discharge, 13 ft<sup>3</sup>/s, Jan. 2, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 318 ft<sup>3</sup>/s, May 21, gage height, 5.78 ft; maximum gage height, 6.65 ft, Mar. 3 (backwater from ice); minimum daily discharge, 25 ft<sup>3</sup>/s, Jan. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL   | AUG    | SEP  |
|-------------|-------|-------|------|------|------|------|------|------|------|-------|--------|------|
| 1           | 89    | 85    | 72   | 32   | 41   | 42   | 81   | 43   | 84   | 95    | 92     | 84   |
| 2           | 91    | 80    | 64   | 32   | 45   | 45   | 77   | 44   | 85   | 97    | 85     | 86   |
| 3           | 94    | 83    | 70   | 32   | 45   | 50   | 82   | 47   | 81   | 96    | 88     | 80   |
| 4           | 91    | 80    | 70   | 34   | 42   | 55   | 133  | 46   | 78   | 96    | 89     | 84   |
| 5           | 87    | 80    | 71   | 36   | 42   | 60   | 182  | 42   | 68   | 98    | 84     | 99   |
| 6           | 85    | 81    | 77   | 36   | 42   | 70   | 211  | 42   | 66   | 92    | 87     | 93   |
| 7           | 81    | 86    | 71   | 35   | 42   | 80   | 186  | 41   | 65   | 85    | 86     | 88   |
| 8           | 81    | 85    | 73   | 32   | 42   | 90   | 147  | 41   | 77   | 74    | 92     | 87   |
| 9           | 81    | 71    | 65   | 30   | 42   | 191  | 118  | 42   | 91   | 73    | 88     | 85   |
| 10          | 82    | 59    | 50   | 28   | 42   | 177  | 101  | 43   | 104  | 85    | 91     | 82   |
| 11          | 85    | 65    | 40   | 30   | 45   | 136  | 87   | 44   | 98   | 108   | 93     | 80   |
| 12          | 80    | 80    | 35   | 30   | 50   | 113  | 77   | 53   | 89   | 106   | 93     | 82   |
| 13          | 81    | 69    | 35   | 30   | 50   | 117  | 67   | 84   | 88   | 98    | 91     | 87   |
| 14          | 85    | 72    | 35   | 30   | 48   | 127  | 64   | 102  | 90   | 92    | 95     | 88   |
| 15          | 84    | 77    | 35   | 30   | 45   | 118  | 59   | 104  | 81   | 84    | 102    | 90   |
| 16          | 84    | 81    | 34   | 30   | 43   | 122  | 56   | 104  | 70   | 77    | 107    | 88   |
| 17          | 83    | 83    | 33   | 28   | 43   | 118  | 57   | 104  | 63   | 74    | 97     | 77   |
| 18          | 90    | 77    | 32   | 25   | 42   | 116  | 58   | 116  | 66   | 86    | 90     | 70   |
| 19          | 95    | 90    | 32   | 28   | 42   | 112  | 57   | 153  | 67   | 102   | 86     | 70   |
| 20          | 93    | 85    | 35   | 28   | 42   | 108  | 58   | 213  | 68   | 100   | 83     | 70   |
| 21          | 90    | 78    | 35   | 26   | 42   | 101  | 57   | 293  | 75   | 92    | 81     | 70   |
| 22          | 96    | 80    | 35   | 28   | 42   | 98   | 56   | 300  | 82   | 96    | 88     | 70   |
| 23          | 101   | 72    | 35   | 30   | 42   | 95   | 54   | 259  | 92   | 97    | 88     | 69   |
| 24          | 96    | 73    | 35   | 35   | 42   | 90   | 52   | 211  | 82   | 90    | 91     | 69   |
| 25          | 93    | 89    | 35   | 38   | 42   | 87   | 51   | 173  | 85   | 85    | 98     | 69   |
| 26          | 90    | 74    | 35   | 40   | 40   | 83   | 51   | 151  | 91   | 78    | 102    | 67   |
| 27          | 87    | 63    | 35   | 42   | 40   | 82   | 48   | 121  | 87   | 79    | 102    | 64   |
| 28          | 87    | 72    | 35   | 43   | 40   | 79   | 46   | 94   | 77   | 83    | 107    | 62   |
| 29          | 86    | 77    | 34   | 43   | ---  | 98   | 47   | 87   | 86   | 79    | 97     | 62   |
| 30          | 86    | 85    | 32   | 40   | ---  | 67   | 46   | 97   | 98   | 90    | 89     | 62   |
| 31          | 86    | ---   | 32   | 37   | ---  | 73   | ---  | 89   | ---  | 93    | 87     | ---  |
| TOTAL       | 2720  | 2332  | 1407 | 1018 | 1205 | 3000 | 2466 | 3383 | 2434 | 2780  | 2849   | 2334 |
| MEAN        | 87.7  | 77.7  | 45.4 | 32.8 | 43.0 | 96.8 | 82.2 | 109  | 81.1 | 89.7  | 91.9   | 77.8 |
| MAX         | 101   | 90    | 77   | 43   | 50   | 191  | 211  | 300  | 104  | 108   | 107    | 99   |
| MIN         | 80    | 59    | 32   | 25   | 40   | 42   | 46   | 41   | 63   | 73    | 81     | 62   |
| AC-FT       | 5400  | 4630  | 2790 | 2020 | 2390 | 5950 | 4890 | 6710 | 4830 | 5510  | 5650   | 4630 |
| CAL YR 1986 | TOTAL | 51660 |      | MEAN | 142  | MAX  | 1490 | MIN  | 31   | AC-FT | 102500 |      |
| WTR YR 1987 | TOTAL | 27928 |      | MEAN | 76.5 | MAX  | 300  | MIN  | 25   | AC-FT | 55400  |      |

09216050 BIG SANDY RIVER AT GASSON BRIDGE, NEAR EDEN, WY--Continued

## WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1981 to September 1986.

WATER TEMPERATURES: October 1981 to September 1986.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>LAB<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CAC03) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) |
|-------|------|-------------------------------------------------|---------------------------------------------------|----------------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|
| NOV   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 12... | 1215 | 80                                              | --                                                | 3330                                                     | 3.0                                  | 920                                    | 170                                          | 120                                                  | 370                                          | 5                                       | 2.9                                                 |
| 26... | 0930 | 69                                              | --                                                | 3350                                                     | 0.0                                  | 1000                                   | 220                                          | 120                                                  | 430                                          | 6                                       | 2.9                                                 |
| DEC   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 16... | 1300 | 37                                              | --                                                | 3580                                                     | 0.0                                  | 1200                                   | 240                                          | 140                                                  | 500                                          | 7                                       | 3.6                                                 |
| JAN   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 28... | 1700 | 43                                              | 4000                                              | --                                                       | 0.0                                  | 1300                                   | 250                                          | 170                                                  | 560                                          | 7                                       | 3.7                                                 |
| FEB   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 17... | 1230 | 43                                              | 4500                                              | --                                                       | 0.0                                  | 1200                                   | 240                                          | 150                                                  | 550                                          | 7                                       | 3.6                                                 |
| MAR   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 02... | 1120 | 40                                              | 4200                                              | --                                                       | 0.0                                  | --                                     | --                                           | --                                                   | --                                           | --                                      | --                                                  |
| 30... | 1300 | 48                                              | 3800                                              | --                                                       | 1.0                                  | 1100                                   | 220                                          | 130                                                  | 540                                          | 7                                       | 3.7                                                 |
| JUN   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 18... | 1515 | 70                                              | 3500                                              | --                                                       | 22.0                                 | 840                                    | 170                                          | 100                                                  | 440                                          | 7                                       | 3.5                                                 |
| JUL   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 30... | 1410 | 97                                              | --                                                | 2690                                                     | 23.5                                 | 870                                    | 200                                          | 91                                                   | 370                                          | 6                                       | 3.5                                                 |
| AUG   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 20... | 0930 | 84                                              | 3750                                              | --                                                       | 19.0                                 | 820                                    | 190                                          | 84                                                   | 400                                          | 6                                       | 3.1                                                 |
| SEP   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |
| 02... | 1015 | 82                                              | --                                                | 3050                                                     | 14.0                                 | 760                                    | 140                                          | 100                                                  | 380                                          | 6                                       | 3.4                                                 |

| DATE  | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CAC03) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SI02) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) |
|-------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|------------------------------------------------------|
| NOV   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                                      |
| 12... | 260                                             | 1300                                          | 37                                                  | 0.6                                                | 13                                                | 2200                                                           | 3.0                                                 | 469                                               | 0.5                                                           | --                                          | 0.01                                                 |
| 26... | 280                                             | 1600                                          | 43                                                  | 0.7                                                | 14                                                | 2600                                                           | 3.5                                                 | 484                                               | 0.5                                                           | --                                          | 0.01                                                 |
| DEC   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                                      |
| 16... | 260                                             | 1900                                          | 43                                                  | 0.8                                                | 13                                                | 3000                                                           | 4.1                                                 | 299                                               | 0.7                                                           | 0.02                                        | --                                                   |
| JAN   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                                      |
| 28... | 260                                             | 2200                                          | 42                                                  | 0.9                                                | 12                                                | 3400                                                           | 4.6                                                 | 394                                               | 0.7                                                           | 0.02                                        | --                                                   |
| FEB   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                                      |
| 17... | 270                                             | 1900                                          | 45                                                  | 0.9                                                | 14                                                | 3100                                                           | 4.2                                                 | 356                                               | 0.8                                                           | 0.04                                        | --                                                   |
| MAR   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                                      |
| 02... | --                                              | --                                            | --                                                  | --                                                 | --                                                | --                                                             | --                                                  | --                                                | --                                                            | --                                          | --                                                   |
| 30... | 260                                             | 1900                                          | 45                                                  | 0.8                                                | 15                                                | 3000                                                           | 4.1                                                 | 390                                               | 0.5                                                           | 0.12                                        | --                                                   |
| JUN   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                                      |
| 18... | 220                                             | 1400                                          | 41                                                  | 0.7                                                | 10                                                | 2300                                                           | 3.1                                                 | 434                                               | 0.1                                                           | 0.04                                        | --                                                   |
| JUL   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                                      |
| 30... | 210                                             | 1300                                          | 33                                                  | 0.6                                                | 11                                                | 2100                                                           | 2.9                                                 | 559                                               | 0.1                                                           | 0.08                                        | --                                                   |
| AUG   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                                      |
| 20... | 210                                             | 1400                                          | 39                                                  | 0.6                                                | 11                                                | 2300                                                           | 3.1                                                 | 511                                               | 0.3                                                           | 0.06                                        | --                                                   |
| SEP   |                                                 |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                                      |
| 02... | 129                                             | 1500                                          | 35                                                  | 0.7                                                | 11                                                | 2200                                                           | 3.1                                                 | 498                                               | 0.2                                                           | <0.01                                       | --                                                   |

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|-------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUL   |      |                                                 |                                      |                                                                 |                                                              |                           |                            |                            |                            |
| 30... | 1410 | 97                                              | 23.5                                 | <0.01                                                           | 0.02                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| AUG   |      |                                                 |                                      |                                                                 |                                                              |                           |                            |                            |                            |
| 20... | 0930 | 84                                              | 19.0                                 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| SEP   |      |                                                 |                                      |                                                                 |                                                              |                           |                            |                            |                            |
| 29... | 1420 | 65                                              | 14.5                                 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## GREEN RIVER BASIN

## 09216790 BITTER CREEK ABOVE KILLPECKER CREEK, AT ROCK SPRINGS, WY

LOCATION.--Lat 41°35'33", long 109°13'27", in NE1/4 SE1/4 SW1/4 sec.26, T.19 N., R.105 W., Sweetwater County, Hydrologic Unit 14040105, 200 ft downstream from viaduct on State Highway 191 and 800 ft upstream from mouth of Killpecker Creek in Rock Springs.

PERIOD OF RECORD.--Water years 1983 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| AUG<br>19... | 0800 | E0.10                                           | 22.0                                 | 0.09                                                            | <0.01                                                        | 0.36                      | <0.01                      | <0.01                      | <0.01                      |
| SEP<br>30... | 0830 | E0.20                                           | 5.5                                  | <0.10                                                           | 0.01                                                         | 0.10                      | <0.10                      | <0.10                      | <0.10                      |

E-Estimate.

## 09216810 KILLPECKER CREEK AT ROCK SPRINGS, WY

LOCATION.--Lat 41°35'56", long 109°13'54", in NW1/4 SW1/4 NW1/4 sec.26, T.19 N., R.105 W., Sweetwater County, Hydrologic Unit 14040105, 0.6 mi downstream from Interstate Highway 80, 0.8 mi upstream from mouth, and 1.2 mi northwest of Rock Springs.

PERIOD OF RECORD.--Water years 1975-80, February 1982 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>16... | 2013 | 0.08                                            | 21.0                                 | 0.12                                                            | 0.08                                                         | 0.04                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>29... | 1630 | E0.50                                           | 24.0                                 | <0.05                                                           | 0.05                                                         | 0.03                      | <0.05                      | <0.05                      | <0.05                      |
| SEP<br>30... | 0805 | 0.08                                            | 6.0                                  | <0.10                                                           | <0.01                                                        | <0.10                     | <0.10                      | <0.10                      | <0.10                      |

E-Estimate.

## 09217000 GREEN RIVER NEAR GREEN RIVER, WY

LOCATION.--Lat 41°30'59", long 109°26'54", in NW1/4 NE1/4 NE1/4 sec.26, T.18 N., R.107 W., Sweetwater County, Hydrologic Unit 14040106, on right bank 0.1 mi downstream from Bitter Creek, 1.0 mi southeast of town of Green River, and 4.0 mi upstream from high-water line of Flaming Gorge Reservoir.

DRAINAGE AREA.--About 14,000 mi<sup>2</sup>, of which 4,260 mi<sup>2</sup>, including 3,959 mi<sup>2</sup> in Great Divide Basin in southern Wyoming, is probably noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1951 to current year.

REVISED RECORDS.--WSP 1713: 1957. WDR-76-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,060 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 9 to Mar. 31 and Apr. 4-8. Records good except those for estimated daily discharges, which are poor. Some regulation by Fontenelle Reservoir since August 1963. (See sta 09211150.) Natural flow of stream affected by transbasin diversions, storage reservoirs, power development, and diversions for irrigation of about 223,000 acres upstream from station.

AVERAGE DISCHARGE.--36 years, 1,791 ft<sup>3</sup>/s, 1,298,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,800 ft<sup>3</sup>/s, Sept. 7, 1965, gage height, 8.53 ft, caused by emergency release from Fontenelle Reservoir; minimum daily discharge, 170 ft<sup>3</sup>/s, Nov. 16, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge observed, 22,200 ft<sup>3</sup>/s, June 19, 1918, at site 1.5 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,130 ft<sup>3</sup>/s, May 22, gage height, 5.13 ft; minimum daily, 390 ft<sup>3</sup>/s, Dec. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR   | APR    | MAY    | JUN    | JUL    | AUG     | SEP   |
|-------------|-------|---------|-------|-------|-------|-------|--------|--------|--------|--------|---------|-------|
| 1           | 1190  | 1080    | 820   | 420   | 560   | 600   | 784    | 3180   | 4420   | 1400   | 2300    | 1230  |
| 2           | 1310  | 1080    | 820   | 450   | 560   | 600   | 805    | 3520   | 3970   | 1330   | 2030    | 1080  |
| 3           | 1330  | 1060    | 820   | 450   | 560   | 600   | 903    | 4210   | 3470   | 1330   | 1750    | 989   |
| 4           | 1310  | 1070    | 800   | 450   | 560   | 600   | 1000   | 4360   | 2890   | 1320   | 1520    | 1010  |
| 5           | 1330  | 1070    | 800   | 450   | 580   | 620   | 1400   | 3430   | 2520   | 1330   | 1510    | 1070  |
| 6           | 1360  | 1060    | 750   | 474   | 580   | 620   | 1900   | 3400   | 2290   | 1310   | 1490    | 988   |
| 7           | 1340  | 1070    | 750   | 500   | 580   | 620   | 2500   | 2900   | 2080   | 1320   | 1290    | 966   |
| 8           | 1300  | 1070    | 750   | 500   | 580   | 620   | 3200   | 3180   | 1970   | 1310   | 1190    | 1040  |
| 9           | 1280  | 1050    | 750   | 500   | 580   | 620   | 3950   | 2980   | 2180   | 1240   | 1150    | 1030  |
| 10          | 1220  | 1050    | 750   | 500   | 580   | 620   | 3940   | 2970   | 2630   | 1130   | 1140    | 1010  |
| 11          | 1130  | 1000    | 750   | 500   | 600   | 620   | 3640   | 3000   | 3790   | 1160   | 1030    | 962   |
| 12          | 1100  | 800     | 700   | 500   | 630   | 660   | 3620   | 3350   | 5380   | 1350   | 937     | 938   |
| 13          | 1110  | 700     | 500   | 520   | 630   | 700   | 3460   | 3540   | 5830   | 1960   | 926     | 944   |
| 14          | 1100  | 700     | 390   | 520   | 630   | 700   | 3390   | 3570   | 5420   | 2560   | 952     | 919   |
| 15          | 1090  | 750     | 450   | 520   | 630   | 700   | 3220   | 3610   | 4500   | 2620   | 1040    | 860   |
| 16          | 1100  | 900     | 500   | 520   | 630   | 700   | 3030   | 3630   | 4520   | 2440   | 1000    | 752   |
| 17          | 1050  | 1000    | 500   | 520   | 630   | 740   | 3220   | 3690   | 3680   | 2430   | 971     | 702   |
| 18          | 1030  | 1150    | 490   | 530   | 640   | 780   | 3950   | 3710   | 3470   | 2420   | 962     | 694   |
| 19          | 1090  | 1250    | 470   | 540   | 658   | 850   | 4330   | 3750   | 3570   | 2410   | 987     | 727   |
| 20          | 1220  | 1250    | 450   | 540   | 660   | 900   | 4440   | 5340   | 3580   | 2430   | 1050    | 869   |
| 21          | 1360  | 1200    | 430   | 520   | 660   | 920   | 4150   | 6570   | 3560   | 2430   | 1060    | 893   |
| 22          | 1450  | 1100    | 400   | 500   | 620   | 900   | 3270   | 7050   | 2880   | 2630   | 1070    | 920   |
| 23          | 1430  | 1000    | 400   | 480   | 620   | 850   | 2710   | 6980   | 2590   | 2680   | 1070    | 916   |
| 24          | 1430  | 900     | 400   | 480   | 620   | 850   | 2590   | 6560   | 1880   | 2690   | 1080    | 913   |
| 25          | 1390  | 840     | 400   | 480   | 620   | 820   | 2560   | 5420   | 1540   | 2710   | 1100    | 913   |
| 26          | 1300  | 820     | 400   | 480   | 620   | 800   | 2550   | 4900   | 1550   | 2720   | 1140    | 911   |
| 27          | 1260  | 880     | 400   | 500   | 600   | 800   | 2550   | 4860   | 1550   | 2780   | 1170    | 818   |
| 28          | 1220  | 1000    | 400   | 520   | 600   | 780   | 2570   | 4790   | 1530   | 2870   | 1270    | 690   |
| 29          | 1170  | 900     | 400   | 530   | ---   | 740   | 2700   | 4580   | 1410   | 2740   | 1360    | 680   |
| 30          | 1120  | 820     | 400   | 550   | ---   | 740   | 3070   | 4760   | 1380   | 2340   | 1350    | 676   |
| 31          | 1070  | ---     | 420   | 560   | ---   | 740   | ---    | 4750   | ---    | 2320   | 1350    | ---   |
| TOTAL       | 38190 | 29620   | 17460 | 15504 | 17018 | 22410 | 85402  | 132540 | 92030  | 63710  | 38245   | 27110 |
| MEAN        | 1232  | 987     | 563   | 500   | 608   | 723   | 2847   | 4275   | 3068   | 2055   | 1234    | 904   |
| MAX         | 1450  | 1250    | 820   | 560   | 660   | 920   | 4440   | 7050   | 5830   | 2870   | 2300    | 1230  |
| MIN         | 1030  | 700     | 390   | 420   | 560   | 600   | 784    | 2900   | 1380   | 1130   | 926     | 676   |
| AC-FT       | 75750 | 58750   | 34630 | 30750 | 33760 | 44450 | 169400 | 262900 | 182500 | 126400 | 75860   | 53770 |
| CAL YR 1986 | TOTAL | 1148934 |       | MEAN  | 3148  | MAX   | 14300  | MIN    | 390    | AC-FT  | 2279000 |       |
| WTR YR 1987 | TOTAL | 579239  |       | MEAN  | 1587  | MAX   | 7050   | MIN    | 390    | AC-FT  | 1149000 |       |



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1951 to current year.

WATER TEMPERATURES: May 1951 to current year.

SUSPENDED-SEDIMENT DISCHARGE: May 1951 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,870 microsiemens, Nov. 24, 1985; minimum daily, 212 microsiemens, Nov. 23, 1983.

WATER TEMPERATURES: Maximum 29.0°C, July 1, 1977; minimum, 0.0°C, on many days during winter period each year.  
SEDIMENT CONCENTRATIONS: Maximum daily mean, 15,000 mg/L, Aug. 11, 1963; minimum daily mean, 0 mg/L, Sept. 18, 1962.

SEDIMENT LOADS: Maximum daily, 110,000 tons, Mar. 28, 1962; minimum daily, 0 ton, Sept. 18, 1962.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,610 microsiemens, Dec. 30; minimum daily, 296 microsiemens, May 22.

TEMPERATURES: Maximum daily, 23.0°C, July 23; minimum, 0.0°C on many days during November through March.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 507 mg/L, July 29; minimum daily mean, 4 mg/L, Feb. 20, 24.

SEDIMENT LOADS: Maximum daily, 3,750 tons, July 29; minimum daily, 6.7 tons, Feb. 24.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED         | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|----------------------------------|-------------------------------------|-----------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|
|              |      |                                                 |                                                   |                                |                                      | (MM<br>OF<br>HG)                 |                                     | (PER-<br>CENT<br>SATUR-<br>ATION) |                                        |                                              |                                                      |
| OCT<br>01... | 1325 | 1170                                            | 685                                               | 8.3                            | 9.0                                  | 610                              | 11.9                                | 129                               | 240                                    | 58                                           | 24                                                   |
| DEC<br>18... | 0900 | 550                                             | 900                                               | 8.4                            | 0.0                                  | 615                              | 11.4                                | 97                                | 360                                    | 83                                           | 36                                                   |
| FEB<br>19... | 1530 | 646                                             | 820                                               | 8.0                            | 0.0                                  | 610                              | 11.0                                | 94                                | 300                                    | 74                                           | 28                                                   |
| APR<br>02... | 1030 | 765                                             | 755                                               | 8.2                            | 3.0                                  | 620                              | 11.2                                | 103                               | 280                                    | 69                                           | 27                                                   |
| JUN<br>17... | 1000 | 3450                                            | 310                                               | 8.3                            | 17.0                                 | 615                              | 8.0                                 | 103                               | 120                                    | 31                                           | 11                                                   |
| JUL<br>29... | 1330 | 2700                                            | --                                                | --                             | 22.0                                 | --                               | --                                  | --                                | --                                     | --                                           | --                                                   |
| AUG<br>18... | 1545 | 964                                             | 585                                               | 8.6                            | 20.0                                 | 640                              | 8.5                                 | 112                               | 180                                    | 46                                           | 17                                                   |
| SEP<br>02... | 0800 | 1090                                            | --                                                | --                             | 18.0                                 | --                               | --                                  | --                                | --                                     | --                                           | --                                                   |
| 30...        | 0925 | 633                                             | 695                                               | --                             | 12.0                                 | --                               | --                                  | --                                | --                                     | --                                           | --                                                   |

[illegible]

## 09217000 GREEN RIVER NEAR GREEN RIVER, WY--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|-----------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------|
| OCT 01... | 1490                                              | --                                                            | 0.1                                                           | --                                                   | --                                                            | --                                                   | --                                                                 | 0.03                                        | --                                                   | --                                                             | --                                                            |
| DEC 18... | 976                                               | --                                                            | 0.2                                                           | --                                                   | --                                                            | --                                                   | --                                                                 | 0.06                                        | --                                                   | --                                                             | --                                                            |
| FEB 19... | 895                                               | --                                                            | 0.2                                                           | --                                                   | --                                                            | --                                                   | --                                                                 | 0.05                                        | --                                                   | --                                                             | 85                                                            |
| APR 02... | 1060                                              | --                                                            | 0.1                                                           | --                                                   | --                                                            | --                                                   | --                                                                 | 0.04                                        | --                                                   | --                                                             | 92                                                            |
| JUN 17... | 1800                                              | <0.01                                                         | <0.3                                                          | 0.02                                                 | 0.03                                                          | 1.4                                                  | 1.4                                                                | 0.05                                        | 0.03                                                 | <0.01                                                          | 2                                                             |
| JUL 29... | --                                                | <0.01                                                         | <0.1                                                          | 0.02                                                 | 0.05                                                          | 0.58                                                 | 0.6                                                                | 0.28                                        | 0.07                                                 | <0.01                                                          | --                                                            |
| AUG 18... | 958                                               | <0.01                                                         | <0.1                                                          | 0.04                                                 | 0.04                                                          | 0.16                                                 | 0.2                                                                | 0.04                                        | <0.01                                                | <0.01                                                          | 38                                                            |
| SEP 02... | --                                                | <0.01                                                         | <0.1                                                          | 0.02                                                 | 0.02                                                          | --                                                   | <0.2                                                               | 0.03                                        | <0.01                                                | <0.01                                                          | --                                                            |
| 30...     | --                                                | <0.01                                                         | <0.1                                                          | 0.02                                                 | 0.02                                                          | 0.28                                                 | 0.3                                                                | <0.01                                       | <0.01                                                | 0.01                                                           | --                                                            |

| DATE      | TIME | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.004 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.008 MM | SED.<br>SUSP.<br>FALL<br>DIAM.<br>% FINER<br>THAN<br>.016 MM |
|-----------|------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| JUL 29... | 1330 | 55                                                           | 69                                                           | 84                                                           |

SPECIFIC CONDUCTANCE, LABORATORY (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
ONCE-DAILY

| DAY         | OCT  | NOV | DEC  | JAN  | FEB  | MAR  | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|-----|------|------|------|------|-----|-----|-----|-----|-----|-----|
| 1           | 655  | 742 | 778  | 1460 | 932  | 1190 | 827 | 483 | 442 | 491 | 382 | 534 |
| 2           | 641  | 731 | 784  | 1080 | 939  | 975  | 837 | 470 | 455 | 492 | 403 | 569 |
| 3           | 645  | 738 | 773  | 1140 | 1020 | 920  | 828 | 456 | 447 | 500 | 418 | 592 |
| 4           | 736  | 736 | 757  | 1140 | 896  | 841  | 787 | 427 | 457 | 509 | 437 | 612 |
| 5           | 659  | 715 | 769  | 1100 | 1200 | 820  | 804 | 408 | 463 | 502 | 441 | 620 |
| 6           | 647  | 722 | 521  | 1170 | 1110 | 844  | 652 | 440 | 454 | 519 | 436 | 634 |
| 7           | 638  | 710 | 791  | 1110 | 1030 | 856  | 610 | 502 | 457 | 512 | 484 | 624 |
| 8           | 646  | 737 | 790  | 1090 | 989  | 840  | 548 | 388 | 473 | 513 | 500 | 582 |
| 9           | 646  | 734 | 769  | 1270 | 1410 | 814  | 520 | 381 | 463 | 525 | 507 | 588 |
| 10          | 669  | 732 | 820  | 1150 | 949  | 824  | 509 | 381 | 446 | 527 | 497 | 582 |
| 11          | 677  | 707 | 662  | 1270 | 1050 | 1130 | 528 | 406 | 414 | 569 | 507 | 577 |
| 12          | 706  | 729 | 675  | 1150 | 1190 | 904  | 502 | 367 | 397 | 580 | 550 | 613 |
| 13          | 700  | 816 | 756  | 1220 | 1140 | 798  | 493 | 367 | 366 | 478 | 559 | 608 |
| 14          | 705  | 863 | 844  | 1170 | 1020 | 777  | 494 | 364 | 338 | 460 | 560 | 615 |
| 15          | 696  | 830 | 1060 | 1270 | 1120 | 769  | 497 | 352 | 333 | 458 | 550 | 636 |
| 16          | 699  | 811 | 1140 | 1280 | 1220 | 882  | 499 | 336 | 323 | 465 | 596 | 678 |
| 17          | 711  | 752 | 1210 | 1350 | 1030 | 832  | 496 | 339 | 333 | 461 | 592 | 691 |
| 18          | 729  | 694 | 1160 | 1240 | 1010 | 742  | 478 | 333 | 337 | 461 | 567 | 720 |
| 19          | 726  | 652 | 1430 | 1290 | 1180 | 924  | 469 | 335 | 335 | 510 | 579 | 706 |
| 20          | 746  | 669 | 1180 | 1160 | 860  | 765  | 444 | 302 | 335 | 478 | 550 | 638 |
| 21          | 821  | 659 | 1140 | 859  | 1170 | 730  | 436 | 324 | 332 | 460 | 546 | 630 |
| 22          | 675  | 669 | 1260 | 1290 | 810  | 760  | 455 | 296 | 359 | 442 | 556 | 605 |
| 23          | 672  | 711 | 1230 | 1230 | 812  | 751  | 467 | 299 | 359 | 433 | 562 | 645 |
| 24          | 676  | 754 | 1560 | 1050 | 948  | 759  | 483 | 302 | 425 | 432 | 561 | 623 |
| 25          | 659  | 708 | 1450 | 1130 | 1090 | 777  | 484 | 362 | 437 | 400 | 577 | 627 |
| 26          | 669  | 788 | 1370 | 1180 | 796  | 798  | 492 | 384 | 446 | 393 | 584 | 640 |
| 27          | 677  | 800 | 1150 | 1340 | 1040 | 788  | 516 | 454 | 438 | 372 | 568 | 643 |
| 28          | 690  | 710 | 1380 | 1170 | 1130 | 815  | 517 | 389 | 438 | 364 | 600 | 700 |
| 29          | 702  | 738 | 1230 | 1150 | ---  | 822  | 506 | 397 | 455 | 380 | 554 | 703 |
| 30          | 706  | 777 | 1610 | 1060 | ---  | 620  | 494 | 435 | 482 | 381 | 536 | 718 |
| 31          | 745  | --- | 1270 | 1000 | ---  | 876  | --- | 464 | --- | 389 | 533 | --- |
| MEAN        | 689  | 738 | 1040 | 1180 | 1040 | 837  | 556 | 385 | 408 | 466 | 526 | 632 |
| MAX         | 821  | 863 | 1610 | 1460 | 1410 | 1190 | 837 | 502 | 482 | 580 | 600 | 720 |
| MIN         | 638  | 652 | 521  | 859  | 796  | 620  | 436 | 296 | 323 | 364 | 382 | 534 |
| CAL YR 1986 | MEAN | 611 | MAX  | 1610 | MIN  | 274  |     |     |     |     |     |     |
| WTR YR 1987 | MEAN | 707 | MAX  | 1610 | MIN  | 296  |     |     |     |     |     |     |

## GREEN RIVER BASIN

09217000 GREEN RIVER NEAR GREEN RIVER, WY--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
ONCE-DAILY

| DAY         | OCT  | NOV | DEC | JAN  | FEB | MAR | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------------|------|-----|-----|------|-----|-----|------|------|------|------|------|------|
| 1           | 7.0  | 2.0 | .0  | .0   | .0  | .0  | 7.0  | 16.0 | 14.5 | 20.0 | 21.0 | 20.5 |
| 2           | 5.0  | 3.0 | .0  | .0   | .0  | .0  | 5.5  | 15.0 | 15.5 | 20.0 | 20.0 | 19.0 |
| 3           | 6.0  | 2.5 | .0  | .0   | .0  | .0  | 8.0  | 14.0 | 17.5 | 20.0 | 19.0 | 18.5 |
| 4           | 7.5  | 4.0 | .0  | .0   | .0  | .0  | 7.5  | 15.5 | 17.5 | 20.0 | 19.0 | 16.0 |
| 5           | 7.5  | 5.0 | .0  | .0   | .0  | .0  | 7.0  | 16.5 | 18.0 | 17.0 | 20.0 | 17.0 |
| 6           | 9.0  | 2.5 | .0  | .0   | .0  | .0  | 8.0  | 15.5 | 18.0 | 19.0 | 21.0 | 17.5 |
| 7           | 10.5 | .0  | .0  | .0   | .0  | .0  | 6.5  | 16.0 | 16.0 | 19.0 | 20.0 | 15.5 |
| 8           | 11.0 | .0  | .0  | .0   | .0  | .0  | 6.0  | 17.0 | 18.0 | 20.0 | 21.5 | 16.0 |
| 9           | 9.5  | .0  | .0  | .0   | .0  | .0  | 5.0  | 15.0 | 17.5 | 18.0 | 22.0 | 16.0 |
| 10          | 9.0  | .0  | .0  | .0   | .0  | .0  | 5.5  | 17.5 | 19.0 | 17.5 | 21.0 | 15.5 |
| 11          | 3.0  | .0  | .0  | .0   | .0  | .0  | 5.0  | 16.0 | 19.5 | 19.0 | 22.0 | 15.5 |
| 12          | 3.5  | .0  | .0  | .0   | .0  | .0  | 5.5  | 18.5 | 19.0 | 20.5 | 21.5 | 16.0 |
| 13          | 4.5  | .0  | .0  | .0   | .0  | .0  | 6.0  | 17.0 | 18.5 | 21.0 | 18.0 | 16.0 |
| 14          | 6.0  | .0  | .0  | .0   | .0  | .0  | 7.5  | 18.0 | 18.0 | 21.0 | 18.5 | 16.5 |
| 15          | 7.0  | .0  | .0  | .0   | .0  | .0  | 9.0  | 19.0 | 18.5 | 21.5 | 18.0 | 16.0 |
| 16          | 7.5  | .0  | .0  | .0   | .0  | .0  | 8.5  | 19.0 | 19.0 | 20.5 | 17.0 | 16.0 |
| 17          | 8.0  | .0  | .0  | .0   | .0  | .0  | 10.0 | 18.0 | 20.0 | 18.0 | 17.0 | 15.0 |
| 18          | 6.0  | .0  | .0  | .0   | .0  | .0  | 7.5  | 17.5 | 20.0 | 18.5 | 18.0 | 16.0 |
| 19          | 5.5  | .0  | .0  | .0   | .0  | .0  | 6.5  | 16.0 | 20.0 | 20.0 | 19.0 | 15.0 |
| 20          | 7.0  | .0  | .0  | .0   | .0  | .0  | 5.0  | 15.0 | 18.5 | 20.0 | 20.0 | 15.5 |
| 21          | 7.5  | .0  | .0  | .0   | .0  | .0  | 6.5  | 14.0 | 19.5 | 20.5 | 20.0 | 15.0 |
| 22          | 7.5  | .0  | .0  | .0   | .0  | .0  | 8.0  | 14.0 | 20.5 | 20.5 | 20.0 | 15.0 |
| 23          | 8.0  | .0  | .0  | .0   | .0  | .0  | 10.5 | 14.0 | 20.0 | 23.0 | 18.0 | 15.5 |
| 24          | 7.0  | .0  | .0  | .0   | .0  | .0  | 12.0 | 14.5 | 19.5 | 22.0 | 18.0 | 15.0 |
| 25          | 7.0  | .0  | .0  | .0   | .0  | 2.5 | 13.0 | 12.5 | 20.0 | 20.0 | 15.0 | 15.5 |
| 26          | 7.0  | .0  | .0  | .0   | .0  | 1.0 | 13.0 | 11.0 | 19.5 | 20.0 | 18.0 | 14.0 |
| 27          | 7.5  | .0  | .0  | .0   | .0  | .5  | 15.0 | 12.0 | 21.0 | 22.5 | 18.5 | 12.0 |
| 28          | 7.0  | .0  | .0  | .0   | .0  | .5  | 16.0 | 12.5 | 19.5 | 20.5 | 17.5 | 12.0 |
| 29          | 7.0  | .0  | .0  | .0   | --- | .5  | 15.0 | 12.5 | 18.0 | 20.5 | 19.0 | 12.0 |
| 30          | 5.0  | .0  | .0  | .0   | --- | 4.0 | 14.0 | 15.0 | 19.5 | 21.0 | 4.0  | 13.5 |
| 31          | 3.0  | --- | .0  | .0   | --- | 6.0 | ---  | 14.0 | ---  | 21.5 | 4.0  | ---  |
| MEAN        | 7.0  | .5  | .0  | .0   | .0  | .5  | 8.5  | 15.5 | 18.5 | 20.0 | 18.0 | 15.5 |
| MAX         | 11.0 | 5.0 | .0  | .0   | .0  | 6.0 | 16.0 | 19.0 | 21.0 | 23.0 | 22.0 | 20.5 |
| MIN         | 3.0  | .0  | .0  | .0   | .0  | .0  | 5.0  | 11.0 | 14.5 | 17.0 | 4.0  | 12.0 |
| CAL YR 1986 | MEAN | 8.5 | MAX | 22.0 | MIN | .0  |      |      |      |      |      |      |
| WTR YR 1987 | MEAN | 9.0 | MAX | 23.0 | MIN | .0  |      |      |      |      |      |      |

## 09217000 GREEN RIVER NEAR GREEN RIVER, WY--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY     | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|---------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| OCTOBER |                            |                                      | NOVEMBER                            |                            |                                      | DECEMBER                            |                            |                                      |                                     |
| 1       | 1190                       | 27                                   | 87                                  | 1080                       | 17                                   | 50                                  | 820                        | 53                                   | 117                                 |
| 2       | 1310                       | 63                                   | 223                                 | 1080                       | 24                                   | 70                                  | 820                        | 57                                   | 126                                 |
| 3       | 1330                       | 128                                  | 460                                 | 1060                       | 32                                   | 92                                  | 820                        | 62                                   | 137                                 |
| 4       | 1310                       | 106                                  | 375                                 | 1070                       | 33                                   | 95                                  | 800                        | 61                                   | 132                                 |
| 5       | 1330                       | 71                                   | 255                                 | 1070                       | 54                                   | 156                                 | 800                        | 67                                   | 145                                 |
| 6       | 1360                       | 43                                   | 158                                 | 1060                       | 48                                   | 137                                 | 750                        | 70                                   | 142                                 |
| 7       | 1340                       | 27                                   | 98                                  | 1070                       | 45                                   | 130                                 | 750                        | 59                                   | 119                                 |
| 8       | 1300                       | 37                                   | 130                                 | 1070                       | 51                                   | 147                                 | 750                        | 47                                   | 95                                  |
| 9       | 1280                       | 23                                   | 79                                  | 1050                       | 57                                   | 162                                 | 750                        | 18                                   | 36                                  |
| 10      | 1220                       | 25                                   | 82                                  | 1050                       | 67                                   | 190                                 | 750                        | 23                                   | 47                                  |
| 11      | 1130                       | 23                                   | 70                                  | 1000                       | 66                                   | 178                                 | 750                        | 82                                   | 166                                 |
| 12      | 1100                       | 16                                   | 48                                  | 800                        | 68                                   | 147                                 | 700                        | 67                                   | 127                                 |
| 13      | 1110                       | 27                                   | 81                                  | 700                        | 67                                   | 127                                 | 500                        | 62                                   | 84                                  |
| 14      | 1100                       | 26                                   | 77                                  | 700                        | 73                                   | 138                                 | 390                        | 117                                  | 123                                 |
| 15      | 1090                       | 24                                   | 71                                  | 750                        | 66                                   | 134                                 | 450                        | 52                                   | 63                                  |
| 16      | 1100                       | 23                                   | 68                                  | 900                        | 59                                   | 143                                 | 500                        | 33                                   | 45                                  |
| 17      | 1050                       | 21                                   | 60                                  | 1000                       | 53                                   | 143                                 | 500                        | 20                                   | 27                                  |
| 18      | 1030                       | 27                                   | 75                                  | 1150                       | 52                                   | 161                                 | 490                        | 15                                   | 20                                  |
| 19      | 1090                       | 37                                   | 109                                 | 1250                       | 45                                   | 152                                 | 470                        | 23                                   | 29                                  |
| 20      | 1220                       | 288                                  | 949                                 | 1250                       | 47                                   | 159                                 | 450                        | 31                                   | 38                                  |
| 21      | 1360                       | 273                                  | 1000                                | 1200                       | 53                                   | 172                                 | 430                        | 26                                   | 30                                  |
| 22      | 1450                       | 130                                  | 509                                 | 1100                       | 57                                   | 169                                 | 400                        | 16                                   | 17                                  |
| 23      | 1430                       | 117                                  | 452                                 | 1000                       | 55                                   | 148                                 | 400                        | 21                                   | 23                                  |
| 24      | 1430                       | 75                                   | 290                                 | 900                        | 57                                   | 139                                 | 400                        | 28                                   | 30                                  |
| 25      | 1390                       | 48                                   | 180                                 | 840                        | 58                                   | 132                                 | 400                        | 77                                   | 83                                  |
| 26      | 1300                       | 23                                   | 81                                  | 820                        | 38                                   | 84                                  | 400                        | 63                                   | 68                                  |
| 27      | 1260                       | 17                                   | 58                                  | 880                        | 62                                   | 147                                 | 400                        | 58                                   | 63                                  |
| 28      | 1220                       | 15                                   | 49                                  | 1000                       | 59                                   | 159                                 | 400                        | 35                                   | 38                                  |
| 29      | 1170                       | 13                                   | 41                                  | 900                        | 57                                   | 139                                 | 400                        | 19                                   | 21                                  |
| 30      | 1120                       | 24                                   | 73                                  | 820                        | 58                                   | 128                                 | 400                        | 27                                   | 29                                  |
| 31      | 1070                       | 15                                   | 43                                  | ---                        | ---                                  | ---                                 | 420                        | 23                                   | 26                                  |
| TOTAL   | 38190                      | ---                                  | 6331                                | 29620                      | ---                                  | 4128                                | 17460                      | ---                                  | 2246                                |
| JANUARY |                            |                                      | FEBRUARY                            |                            |                                      | MARCH                               |                            |                                      |                                     |
| 1       | 420                        | 30                                   | 34                                  | 560                        | 41                                   | 62                                  | 600                        | 42                                   | 68                                  |
| 2       | 450                        | 17                                   | 21                                  | 560                        | 37                                   | 56                                  | 600                        | 23                                   | 37                                  |
| 3       | 450                        | 18                                   | 22                                  | 560                        | 38                                   | 57                                  | 600                        | 24                                   | 39                                  |
| 4       | 450                        | 24                                   | 29                                  | 560                        | 32                                   | 48                                  | 600                        | 62                                   | 100                                 |
| 5       | 450                        | 34                                   | 41                                  | 580                        | 33                                   | 52                                  | 620                        | 119                                  | 199                                 |
| 6       | 474                        | 19                                   | 24                                  | 580                        | 39                                   | 61                                  | 620                        | 72                                   | 121                                 |
| 7       | 500                        | 15                                   | 20                                  | 580                        | 40                                   | 63                                  | 620                        | 53                                   | 89                                  |
| 8       | 500                        | 19                                   | 26                                  | 580                        | 32                                   | 50                                  | 620                        | 22                                   | 37                                  |
| 9       | 500                        | 21                                   | 28                                  | 580                        | 25                                   | 39                                  | 620                        | 21                                   | 35                                  |
| 10      | 500                        | 19                                   | 26                                  | 580                        | 23                                   | 36                                  | 620                        | 20                                   | 33                                  |
| 11      | 500                        | 15                                   | 20                                  | 600                        | 33                                   | 53                                  | 620                        | 16                                   | 27                                  |
| 12      | 500                        | 28                                   | 38                                  | 630                        | 69                                   | 117                                 | 660                        | 17                                   | 30                                  |
| 13      | 520                        | 36                                   | 51                                  | 630                        | 32                                   | 54                                  | 700                        | 19                                   | 36                                  |
| 14      | 520                        | 26                                   | 37                                  | 630                        | 47                                   | 80                                  | 700                        | 20                                   | 38                                  |
| 15      | 520                        | 43                                   | 60                                  | 630                        | 46                                   | 78                                  | 700                        | 20                                   | 38                                  |
| 16      | 520                        | 32                                   | 45                                  | 630                        | 39                                   | 66                                  | 700                        | 17                                   | 32                                  |
| 17      | 520                        | 19                                   | 27                                  | 630                        | 48                                   | 82                                  | 740                        | 13                                   | 26                                  |
| 18      | 530                        | 30                                   | 43                                  | 640                        | 42                                   | 73                                  | 780                        | 24                                   | 51                                  |
| 19      | 540                        | 17                                   | 25                                  | 658                        | 20                                   | 36                                  | 850                        | 48                                   | 110                                 |
| 20      | 540                        | 18                                   | 26                                  | 660                        | 4                                    | 7.1                                 | 900                        | 74                                   | 180                                 |
| 21      | 520                        | 35                                   | 49                                  | 660                        | 14                                   | 25                                  | 920                        | 82                                   | 204                                 |
| 22      | 500                        | 26                                   | 35                                  | 620                        | 10                                   | 17                                  | 900                        | 92                                   | 224                                 |
| 23      | 480                        | 27                                   | 35                                  | 620                        | 9                                    | 15                                  | 850                        | 84                                   | 193                                 |
| 24      | 480                        | 24                                   | 31                                  | 620                        | 4                                    | 6.7                                 | 850                        | 69                                   | 158                                 |
| 25      | 480                        | 34                                   | 44                                  | 620                        | 11                                   | 18                                  | 820                        | 41                                   | 91                                  |
| 26      | 480                        | 47                                   | 61                                  | 620                        | 9                                    | 15                                  | 800                        | 24                                   | 52                                  |
| 27      | 500                        | 37                                   | 50                                  | 600                        | 9                                    | 15                                  | 800                        | 17                                   | 37                                  |
| 28      | 520                        | 26                                   | 37                                  | 600                        | 32                                   | 52                                  | 780                        | 35                                   | 74                                  |
| 29      | 530                        | 33                                   | 47                                  | ---                        | ---                                  | ---                                 | 740                        | 12                                   | 24                                  |
| 30      | 550                        | 32                                   | 48                                  | ---                        | ---                                  | ---                                 | 740                        | 26                                   | 52                                  |
| 31      | 560                        | 33                                   | 50                                  | ---                        | ---                                  | ---                                 | 740                        | 27                                   | 54                                  |
| TOTAL   | 15504                      | ---                                  | 1130                                | 17018                      | ---                                  | 1333.8                              | 22410                      | ---                                  | 2489                                |

09217000 GREEN RIVER NEAR GREEN RIVER, WY--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY   | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|-------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| APRIL |                            |                                      | MAY                                 |                            |                                      | JUNE                                |                            |                                      |                                     |
| 1     | 784                        | 20                                   | 42                                  | 3180                       | 74                                   | 635                                 | 4420                       | 57                                   | 680                                 |
| 2     | 805                        | 14                                   | 30                                  | 3520                       | 83                                   | 789                                 | 3970                       | 40                                   | 429                                 |
| 3     | 903                        | 12                                   | 29                                  | 4210                       | 102                                  | 1160                                | 3470                       | 36                                   | 337                                 |
| 4     | 1000                       | 15                                   | 40                                  | 4360                       | 102                                  | 1200                                | 2890                       | 32                                   | 250                                 |
| 5     | 1400                       | 56                                   | 212                                 | 3430                       | 78                                   | 722                                 | 2520                       | 24                                   | 163                                 |
| 6     | 1900                       | 106                                  | 544                                 | 3400                       | 69                                   | 633                                 | 2290                       | 17                                   | 105                                 |
| 7     | 2500                       | 156                                  | 1050                                | 2900                       | 59                                   | 462                                 | 2080                       | 14                                   | 79                                  |
| 8     | 3200                       | 236                                  | 2040                                | 3180                       | 38                                   | 326                                 | 1970                       | 13                                   | 69                                  |
| 9     | 3950                       | 184                                  | 1960                                | 2980                       | 32                                   | 257                                 | 2180                       | 18                                   | 106                                 |
| 10    | 3940                       | 117                                  | 1240                                | 2970                       | 25                                   | 200                                 | 2630                       | 43                                   | 305                                 |
| 11    | 3640                       | 107                                  | 1050                                | 3000                       | 357                                  | 2890                                | 3790                       | 53                                   | 542                                 |
| 12    | 3620                       | 98                                   | 958                                 | 3350                       | 382                                  | 3460                                | 5380                       | 58                                   | 843                                 |
| 13    | 3460                       | 85                                   | 794                                 | 3540                       | 43                                   | 411                                 | 5830                       | 58                                   | 913                                 |
| 14    | 3390                       | 85                                   | 778                                 | 3570                       | 31                                   | 299                                 | 5420                       | 50                                   | 732                                 |
| 15    | 3220                       | 90                                   | 782                                 | 3610                       | 30                                   | 292                                 | 4500                       | 28                                   | 340                                 |
| 16    | 3030                       | 98                                   | 802                                 | 3630                       | 30                                   | 294                                 | 4520                       | 28                                   | 342                                 |
| 17    | 3220                       | 100                                  | 869                                 | 3690                       | 39                                   | 389                                 | 3680                       | 29                                   | 288                                 |
| 18    | 3950                       | 114                                  | 1220                                | 3710                       | 48                                   | 481                                 | 3470                       | 28                                   | 262                                 |
| 19    | 4330                       | 145                                  | 1700                                | 3750                       | 34                                   | 344                                 | 3570                       | 25                                   | 241                                 |
| 20    | 4440                       | 132                                  | 1580                                | 5340                       | 96                                   | 1380                                | 3580                       | 18                                   | 174                                 |
| 21    | 4150                       | 104                                  | 1170                                | 6570                       | 144                                  | 2550                                | 3560                       | 19                                   | 183                                 |
| 22    | 3270                       | 92                                   | 812                                 | 7050                       | 154                                  | 2930                                | 2880                       | 16                                   | 124                                 |
| 23    | 2710                       | 70                                   | 512                                 | 6980                       | 146                                  | 2750                                | 2590                       | 13                                   | 91                                  |
| 24    | 2590                       | 59                                   | 413                                 | 6560                       | 83                                   | 1470                                | 1880                       | 11                                   | 56                                  |
| 25    | 2560                       | 43                                   | 297                                 | 5420                       | 62                                   | 907                                 | 1540                       | 13                                   | 54                                  |
| 26    | 2550                       | 49                                   | 337                                 | 4900                       | 62                                   | 820                                 | 1550                       | 18                                   | 75                                  |
| 27    | 2550                       | 59                                   | 406                                 | 4860                       | 68                                   | 892                                 | 1550                       | 16                                   | 67                                  |
| 28    | 2570                       | 54                                   | 375                                 | 4790                       | 53                                   | 685                                 | 1530                       | 12                                   | 50                                  |
| 29    | 2700                       | 92                                   | 671                                 | 4580                       | 70                                   | 866                                 | 1410                       | 8                                    | 30                                  |
| 30    | 3070                       | 100                                  | 829                                 | 4760                       | 104                                  | 1340                                | 1380                       | 142                                  | 529                                 |
| 31    | ---                        | ---                                  | ---                                 | 4750                       | 73                                   | 936                                 | ---                        | ---                                  | ---                                 |
| TOTAL | 85402                      | ---                                  | 23542                               | 132540                     | ---                                  | 32770                               | 92030                      | ---                                  | 8459                                |
| JULY  |                            |                                      | AUGUST                              |                            |                                      | SEPTEMBER                           |                            |                                      |                                     |
| 1     | 1400                       | 475                                  | 1800                                | 2300                       | 25                                   | 155                                 | 1230                       | 26                                   | 86                                  |
| 2     | 1330                       | 185                                  | 664                                 | 2030                       | 21                                   | 115                                 | 1080                       | 37                                   | 108                                 |
| 3     | 1330                       | 47                                   | 169                                 | 1750                       | 18                                   | 85                                  | 989                        | 36                                   | 96                                  |
| 4     | 1320                       | 43                                   | 153                                 | 1520                       | 12                                   | 49                                  | 1010                       | 36                                   | 98                                  |
| 5     | 1330                       | 45                                   | 162                                 | 1510                       | 13                                   | 53                                  | 1070                       | 68                                   | 196                                 |
| 6     | 1310                       | 36                                   | 127                                 | 1490                       | 12                                   | 48                                  | 988                        | 35                                   | 93                                  |
| 7     | 1320                       | 42                                   | 150                                 | 1290                       | 15                                   | 52                                  | 966                        | 28                                   | 73                                  |
| 8     | 1310                       | 45                                   | 159                                 | 1190                       | 23                                   | 74                                  | 1040                       | 50                                   | 140                                 |
| 9     | 1240                       | 48                                   | 161                                 | 1150                       | 12                                   | 37                                  | 1030                       | 27                                   | 75                                  |
| 10    | 1130                       | 73                                   | 223                                 | 1140                       | 11                                   | 34                                  | 1010                       | 21                                   | 57                                  |
| 11    | 1160                       | 89                                   | 279                                 | 1030                       | 9                                    | 25                                  | 962                        | 20                                   | 52                                  |
| 12    | 1350                       | 59                                   | 215                                 | 937                        | 8                                    | 20                                  | 938                        | 17                                   | 43                                  |
| 13    | 1960                       | 112                                  | 593                                 | 926                        | 7                                    | 18                                  | 944                        | 18                                   | 46                                  |
| 14    | 2560                       | 125                                  | 864                                 | 952                        | 10                                   | 26                                  | 919                        | 28                                   | 69                                  |
| 15    | 2620                       | 72                                   | 509                                 | 1040                       | 70                                   | 197                                 | 860                        | 28                                   | 65                                  |
| 16    | 2440                       | 60                                   | 395                                 | 1000                       | 158                                  | 427                                 | 752                        | 17                                   | 35                                  |
| 17    | 2430                       | 85                                   | 558                                 | 971                        | 120                                  | 315                                 | 702                        | 11                                   | 21                                  |
| 18    | 2420                       | 79                                   | 516                                 | 962                        | 42                                   | 109                                 | 694                        | 12                                   | 22                                  |
| 19    | 2410                       | 64                                   | 416                                 | 987                        | 18                                   | 48                                  | 727                        | 17                                   | 33                                  |
| 20    | 2430                       | 54                                   | 354                                 | 1050                       | 19                                   | 54                                  | 869                        | 59                                   | 138                                 |
| 21    | 2430                       | 51                                   | 335                                 | 1060                       | 15                                   | 43                                  | 893                        | 16                                   | 39                                  |
| 22    | 2630                       | 46                                   | 327                                 | 1070                       | 21                                   | 61                                  | 920                        | 18                                   | 45                                  |
| 23    | 2680                       | 33                                   | 239                                 | 1070                       | 18                                   | 52                                  | 916                        | 18                                   | 45                                  |
| 24    | 2690                       | 35                                   | 254                                 | 1080                       | 19                                   | 55                                  | 913                        | 15                                   | 37                                  |
| 25    | 2710                       | 31                                   | 227                                 | 1100                       | 25                                   | 74                                  | 913                        | 12                                   | 30                                  |
| 26    | 2720                       | 18                                   | 132                                 | 1140                       | 22                                   | 68                                  | 911                        | 17                                   | 42                                  |
| 27    | 2780                       | 20                                   | 150                                 | 1170                       | 17                                   | 54                                  | 818                        | 18                                   | 40                                  |
| 28    | 2870                       | 23                                   | 178                                 | 1270                       | 21                                   | 72                                  | 690                        | 8                                    | 15                                  |
| 29    | 2740                       | 507                                  | 3750                                | 1360                       | 25                                   | 92                                  | 680                        | 8                                    | 15                                  |
| 30    | 2340                       | 192                                  | 1210                                | 1350                       | 24                                   | 87                                  | 676                        | 11                                   | 20                                  |
| 31    | 2320                       | 41                                   | 257                                 | 1350                       | 26                                   | 95                                  | ---                        | ---                                  | ---                                 |
| TOTAL | 63710                      | ---                                  | 15526                               | 38245                      | ---                                  | 2694                                | 27110                      | ---                                  | 1874                                |
| YEAR  | 579239                     |                                      | 102522.8                            |                            |                                      |                                     |                            |                                      |                                     |

## 09217010 GREEN RIVER BELOW GREEN RIVER, WY

LOCATION.--Lat 41°29'46", long 109°26'17", in SW1/4 SE1/4 NW1/4 sec.36, T.18 N., R.107 W., Sweetwater County, Hydrologic Unit 14040106, at bridge on county road, 1.7 mi downstream from Bitter Creek, 2.7 mi southeast of town of Green River, and 3.3 mi upstream from Logan Draw.

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------|
| OCT<br>28... | 1630 | 1250                                            | 765                                               | 8.5                            | 11.0                                 | 620                                                  | 10.2                                | 114                                                            | 26                                                              | K1                                                             | 260                                    |
| JAN<br>06... | 1630 | 475                                             | 1000                                              | 8.2                            | 0.0                                  | 610                                                  | 9.6                                 | 82                                                             | 12                                                              | K1                                                             | 330                                    |
| APR<br>02... | 0800 | 765                                             | 955                                               | 8.3                            | 3.0                                  | 620                                                  | 11.1                                | 102                                                            | <10                                                             | K5                                                             | 310                                    |
| AUG<br>18... | 1630 | 964                                             | 585                                               | 8.6                            | 19.0                                 | 640                                                  | 9.2                                 | 119                                                            | <10                                                             | K17                                                            | 190                                    |

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

| DATE         | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) |
|--------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|
| OCT<br>28... | 61                                           | 26                                                   | 59                                           | 2                                       | 1.5                                                 | 170                                             | 190                                           | 13                                                  | 0.4                                                | 5.4                                               |
| JAN<br>06... | 79                                           | 32                                                   | 81                                           | 2                                       | 2.4                                                 | 203                                             | 320                                           | 19                                                  | 0.3                                                | 8.7                                               |
| APR<br>02... | 71                                           | 32                                                   | 87                                           | 2                                       | 2.2                                                 | 180                                             | 260                                           | 24                                                  | 0.3                                                | 9.0                                               |
| AUG<br>18... | 46                                           | 19                                                   | 52                                           | 2                                       | 1.4                                                 | 120                                             | 170                                           | 11                                                  | 0.2                                                | 3.7                                               |

| DATE         | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|--------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>28... | 492                                                                | 460                                                            | 0.67                                                | 1660                                              | <0.1                                                 | 0.2                                                           | 0.03                                                 | 0.57                                                 | 0.6                                                                | 0.04                                        |
| JAN<br>06... | 660                                                                | 660                                                            | 0.90                                                | 846                                               | 0.2                                                  | 0.2                                                           | 0.20                                                 | 0.20                                                 | 0.4                                                                | 0.07                                        |
| APR<br>02... | 592                                                                | 590                                                            | 0.81                                                | 1220                                              | 0.1                                                  | 0.2                                                           | 0.20                                                 | 0.60                                                 | 0.8                                                                | 0.17                                        |
| AUG<br>18... | 404                                                                | 380                                                            | 0.55                                                | 1050                                              | <0.1                                                 | 0.1                                                           | 0.02                                                 | 0.38                                                 | 0.4                                                                | 0.06                                        |



## 09218500 BLACKS FORK NEAR MILLBURNE, WY

LOCATION.--Lat 41°01'54", long 110°34'43", in NW1/4 NE1/4 SW1/4 sec.11, T.12 N., R.117 W., Uinta County, Hydrologic Unit 14040107, on left bank 0.4 mi downstream from Meeks Cabin Dam, 2.7 mi north of Utah-Wyoming State line, and 17 mi southwest of Millburne.

DRAINAGE AREA.--152 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1939 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 929: 1940.

GAGE.--Water-stage recorder. Datum of gage is 8,512.27 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 1, 1971, at several sites about 2.0 mi downstream at various datums.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Meeks Cabin Reservoir, capacity, 32,470 acre-ft, since June 1971. No diversion upstream from station.

AVERAGE DISCHARGE.--48 years, 164 ft<sup>3</sup>/s, 118,800 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,530 ft<sup>3</sup>/s, June 7, 1957, from rating curve extended above 1,500 ft<sup>3</sup>/s; maximum gage height, 6.46 ft in gage well, 6.76 ft from floodmarks, June 12, 1965, site and datum then in use; minimum daily discharge, 1.0 ft<sup>3</sup>/s, Sept. 15, 16, 1983, due to regulation by Meeks Cabin Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,290 ft<sup>3</sup>/s, May 17, gage height, 4.52 ft; minimum daily, 12 ft<sup>3</sup>/s, Mar. 8-9, Apr. 6-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN  | FEB  | MAR  | APR  | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|---------|------|------|------|------|------|-------|-------|-------|--------|------|
| 1           | 94    | 54      | 40   | 40   | 18   | 18   | 14   | 32    | 351   | 508   | 176    | 122  |
| 2           | 94    | 54      | 40   | 40   | 18   | 18   | 14   | 48    | 347   | 506   | 176    | 118  |
| 3           | 93    | 53      | 40   | 41   | 18   | 18   | 14   | 49    | 400   | 503   | 176    | 118  |
| 4           | 92    | 53      | 40   | 41   | 18   | 18   | 14   | 49    | 447   | 501   | 182    | 115  |
| 5           | 91    | 53      | 40   | 41   | 18   | 18   | 14   | 75    | 476   | 500   | 188    | 115  |
| 6           | 92    | 53      | 40   | 42   | 18   | 17   | 12   | 94    | 543   | 498   | 188    | 115  |
| 7           | 93    | 47      | 40   | 41   | 18   | 15   | 12   | 204   | 636   | 473   | 188    | 115  |
| 8           | 93    | 39      | 40   | 41   | 18   | 12   | 12   | 397   | 792   | 454   | 188    | 142  |
| 9           | 93    | 39      | 40   | 41   | 18   | 12   | 13   | 528   | 735   | 448   | 185    | 165  |
| 10          | 92    | 39      | 40   | 41   | 18   | 13   | 13   | 593   | 675   | 446   | 185    | 166  |
| 11          | 91    | 39      | 40   | 40   | 18   | 13   | 13   | 666   | 685   | 439   | 173    | 168  |
| 12          | 78    | 39      | 40   | 39   | 18   | 13   | 13   | 699   | 697   | 440   | 163    | 167  |
| 13          | 16    | 40      | 40   | 35   | 18   | 13   | 13   | 794   | 658   | 437   | 163    | 165  |
| 14          | 36    | 41      | 40   | 31   | 18   | 13   | 13   | 841   | 646   | 384   | 165    | 165  |
| 15          | 56    | 41      | 40   | 31   | 18   | 13   | 13   | 913   | 633   | 353   | 165    | 154  |
| 16          | 56    | 41      | 41   | 31   | 18   | 13   | 13   | 1100  | 720   | 350   | 164    | 142  |
| 17          | 55    | 40      | 40   | 31   | 18   | 13   | 13   | 1200  | 669   | 349   | 163    | 142  |
| 18          | 54    | 40      | 40   | 31   | 18   | 13   | 13   | 1120  | 595   | 347   | 155    | 142  |
| 19          | 54    | 40      | 40   | 31   | 18   | 13   | 14   | 951   | 543   | 348   | 146    | 142  |
| 20          | 54    | 40      | 40   | 27   | 18   | 14   | 14   | 756   | 454   | 348   | 145    | 142  |
| 21          | 53    | 40      | 41   | 21   | 18   | 14   | 14   | 623   | 405   | 279   | 145    | 142  |
| 22          | 53    | 40      | 41   | 21   | 18   | 14   | 14   | 526   | 404   | 227   | 145    | 153  |
| 23          | 52    | 40      | 41   | 21   | 18   | 14   | 14   | 451   | 425   | 229   | 145    | 162  |
| 24          | 52    | 40      | 41   | 21   | 18   | 14   | 14   | 408   | 439   | 230   | 144    | 162  |
| 25          | 52    | 40      | 41   | 20   | 18   | 14   | 15   | 372   | 437   | 227   | 134    | 157  |
| 26          | 52    | 40      | 41   | 20   | 18   | 14   | 15   | 356   | 432   | 224   | 126    | 157  |
| 27          | 52    | 40      | 41   | 20   | 18   | 14   | 14   | 350   | 430   | 223   | 126    | 157  |
| 28          | 51    | 40      | 41   | 19   | 19   | 14   | 14   | 281   | 428   | 195   | 126    | 155  |
| 29          | 51    | 40      | 41   | 19   | ---  | 14   | 15   | 263   | 430   | 180   | 126    | 103  |
| 30          | 52    | 40      | 41   | 18   | ---  | 14   | 15   | 343   | 478   | 179   | 126    | 56   |
| 31          | 53    | ---     | 40   | 18   | ---  | 14   | ---  | 343   | ---   | 176   | 126    | ---  |
| TOTAL       | 2050  | 1285    | 1251 | 954  | 505  | 444  | 408  | 15425 | 16010 | 11001 | 4903   | 4224 |
| MEAN        | 66.1  | 42.8    | 40.4 | 30.8 | 18.0 | 14.3 | 13.6 | 498   | 534   | 355   | 158    | 141  |
| MAX         | 94    | 54      | 41   | 42   | 19   | 18   | 15   | 1200  | 792   | 508   | 188    | 168  |
| MIN         | 16    | 39      | 40   | 18   | 18   | 12   | 12   | 32    | 347   | 176   | 126    | 56   |
| AC-FT       | 4070  | 2550    | 2480 | 1890 | 1000 | 881  | 809  | 30600 | 31760 | 21820 | 9730   | 8380 |
| CAL YR 1986 | TOTAL | 81259.6 |      | MEAN | 223  | MAX  | 2070 | MIN   | 7.7   | AC-FT | 161200 |      |
| WTR YR 1987 | TOTAL | 58460   |      | MEAN | 160  | MAX  | 1200 | MIN   | 12    | AC-FT | 116000 |      |

## 09220000 EAST FORK OF SMITHS FORK NEAR ROBERTSON, WY

LOCATION.--Lat 41°03'15", long 110°23'52", in NE1/4 NW1/4 NE1/4 sec.5, T.12 N., R.115 W., Uinta County, Hydrologic Unit 14040107, Wasatch National Forest, on left bank 60 ft downstream from bridge, 1.0 mi upstream from Gilbert Creek, 6.1 mi downstream from State Line Reservoir, and 9.0 mi south of Robertson.

DRAINAGE AREA.--53.0 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1939 to current year (no winter records since 1971). Monthly discharge only for some periods, published in WSP 1313. Prior to Oct. 1, 1978, published as East Fork of Smith Fork near Robertson.

REVISED RECORDS.--WSP 979: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 8,470 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 12, 1957, at datum 3.96 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Flow completely regulated by State Line Reservoir, 6.1 mi upstream, total capacity, 14,000 acre-ft, dead storage is about 2,000 acre-ft, since May 1979.

COOPERATION.--Records provided by Office of the Wyoming State Engineer and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--32 years (water years 1940-71), 47.1 ft<sup>3</sup>/s, 34,120 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,450 ft<sup>3</sup>/s, June 10, 1965, gage height, 6.75 ft; no flow part of each day Apr. 17-22, 24, 25, 1950; minimum gage height, 3.26 ft, present datum, Apr. 22, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 646 ft<sup>3</sup>/s, May 17, gage height, 5.91 ft; minimum daily during period of operation, 11 ft<sup>3</sup>/s, May 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY  | JUN  | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| 1     |     |     |     |     |     |     | --- | 13   | 126  | 150  | 68   | 33   |
| 2     |     |     |     |     |     |     | --- | 14   | 124  | 143  | 68   | 33   |
| 3     |     |     |     |     |     |     | --- | 12   | 126  | 158  | 67   | 42   |
| 4     |     |     |     |     |     |     | --- | 12   | 137  | 158  | 67   | 55   |
| 5     |     |     |     |     |     |     | --- | 11   | 170  | 158  | 67   | 55   |
| 6     |     |     |     |     |     |     | --- | 11   | 176  | 158  | 62   | 55   |
| 7     |     |     |     |     |     |     | --- | 24   | 198  | 155  | 53   | 55   |
| 8     |     |     |     |     |     |     | --- | 46   | 302  | 150  | 53   | 55   |
| 9     |     |     |     |     |     |     | --- | 46   | 245  | 146  | 53   | 55   |
| 10    |     |     |     |     |     |     | --- | 45   | 185  | 139  | 53   | 54   |
| 11    |     |     |     |     |     |     | --- | 52   | 176  | 134  | 53   | 52   |
| 12    |     |     |     |     |     |     | --- | 69   | 189  | 130  | 53   | 51   |
| 13    |     |     |     |     |     |     | --- | 68   | 181  | 128  | 64   | 51   |
| 14    |     |     |     |     |     |     | --- | 79   | 181  | 126  | 88   | 51   |
| 15    |     |     |     |     |     |     | --- | 302  | 181  | 124  | 88   | 51   |
| 16    |     |     |     |     |     |     | --- | 503  | 254  | 108  | 88   | 51   |
| 17    |     |     |     |     |     |     | --- | 521  | 187  | 96   | 88   | 48   |
| 18    |     |     |     |     |     |     | --- | 452  | 163  | 98   | 88   | 41   |
| 19    |     |     |     |     |     |     | --- | 344  | 150  | 98   | 88   | 40   |
| 20    |     |     |     |     |     |     | --- | 236  | 141  | 98   | 70   | 40   |
| 21    |     |     |     |     |     |     | 12  | 216  | 137  | 98   | 47   | 39   |
| 22    |     |     |     |     |     |     | 14  | 188  | 134  | 100  | 46   | 39   |
| 23    |     |     |     |     |     |     | 18  | 163  | 130  | 94   | 45   | 39   |
| 24    |     |     |     |     |     |     | 18  | 151  | 120  | 85   | 45   | 32   |
| 25    |     |     |     |     |     |     | 16  | 142  | 120  | 83   | 44   | 19   |
| 26    |     |     |     |     |     |     | 15  | 137  | 120  | 85   | 44   | 19   |
| 27    |     |     |     |     |     |     | 15  | 126  | 118  | 85   | 41   | 19   |
| 28    |     |     |     |     |     |     | 14  | 122  | 112  | 86   | 33   | 19   |
| 29    |     |     |     |     |     |     | 14  | 101  | 122  | 83   | 33   | 19   |
| 30    |     |     |     |     |     |     | 14  | 100  | 132  | 78   | 33   | 19   |
| 31    |     |     |     |     |     |     | --- | 112  | ---  | 69   | 33   | ---  |
| TOTAL |     |     |     |     |     |     | --- | 4418 | 4837 | 3601 | 1823 | 1231 |
| MEAN  |     |     |     |     |     |     | --- | 143  | 161  | 116  | 58.8 | 41.0 |
| MAX   |     |     |     |     |     |     | --- | 521  | 302  | 158  | 88   | 55   |
| MIN   |     |     |     |     |     |     | --- | 11   | 112  | 69   | 33   | 19   |
| AC-FT |     |     |     |     |     |     | --- | 8760 | 9590 | 7140 | 3620 | 2440 |

## GREEN RIVER BASIN

09221650 SMITHS FORK NEAR LYMAN, WY

LOCATION.--Lat 41°22'31", long 110°12'14", in SW1/4 SE1/4 SE1/4 sec.12, T.16 N., R.114 W., Uinta County, Hydrologic Unit 14040107, at bridge on U.S. Highway 30S, 1.5 mi downstream from Cottonwood Creek, 1.6 mi upstream from bridge on Interstate Highway 80, 2.4 mi upstream from mouth, and 5.7 mi northeast of Lyman.

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

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>17... | 1545 | 206                                             | 20.0                                 | <0.01                                                           | 0.03                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

09222000 BLACKS FORK NEAR LYMAN, WY

LOCATION.--Lat 41°27'08", long 110°10'20", in SW1/4 NW1/4 SW1/4 sec.15, T.17 N., R.113 W., Uinta County, Hydrologic Unit 14040107, 200 ft downstream from bridge on old U.S. Highway 30S, 8.5 mi downstream from Smiths Fork, and 11 mi northeast of Lyman.

DRAINAGE AREA.--821 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1962 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1962 to September 1983.

WATER TEMPERATURES: May 1962 to September 1983.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>17... | 1500 | 330                                             | 18.0                                 | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## 09223000 HAMS FORK BELOW POLE CREEK, NEAR FRONTIER, WY

LOCATION.--Lat 42°06'38", long 110°42'32", in NE1/4 SE1/4 NW1/4 sec.35, T.25 N., R.117 W., Lincoln County, Hydrologic Unit 14040107, on left bank 2.0 mi downstream from Pole Creek, 4.6 mi upstream from Taylor Creek, and 22 mi northwest of Frontier.

DRAINAGE AREA.--128 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1952 to current year. Prior to October 1970, published as "near Elk Creek ranger station."

GAGE.--Water-stage recorder. Elevation of gage is 7,455 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1952 to Sept. 2, 1971, at site 270 ft upstream at present datum, Sept. 3, 1971, to July 30, 1980, at site 150 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Nov. 8 to Mar. 26. Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

AVERAGE DISCHARGE.--35 years, 105 ft<sup>3</sup>/s, 76,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,230 ft<sup>3</sup>/s, June 5, 1986, gage height, 6.72 ft; maximum gage height, 8.10 ft, May 28, 1971, site then in use; minimum daily discharge, 0.10 ft<sup>3</sup>/s, Aug. 17, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft<sup>3</sup>/s and maximum (\*):

| Date                                                      | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|-----------------------------------------------------------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| Apr. 7                                                    | 1000 | *582                           | *5.27            | No other peak greater than base discharge. |      |                                |                  |
| Minimum daily discharge, 8.0 ft <sup>3</sup> /s, Jan. 16. |      |                                |                  |                                            |      |                                |                  |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR  | APR   | MAY   | JUN  | JUL   | AUG    | SEP  |
|-------------|-------|---------|-------|-------|-------|------|-------|-------|------|-------|--------|------|
| 1           | 52    | 29      | 19    | 9.5   | 8.4   | 10   | 61    | 252   | 143  | 55    | 25     | 16   |
| 2           | 52    | 26      | 18    | 9.8   | 9.0   | 12   | 108   | 235   | 138  | 49    | 23     | 16   |
| 3           | 51    | 26      | 18    | 9.4   | 10    | 15   | 197   | 198   | 132  | 45    | 22     | 16   |
| 4           | 49    | 25      | 18    | 9.2   | 10    | 19   | 308   | 178   | 127  | 42    | 21     | 21   |
| 5           | 48    | 25      | 18    | 9.0   | 10    | 22   | 435   | 173   | 124  | 42    | 21     | 22   |
| 6           | 48    | 26      | 19    | 9.0   | 9.5   | 25   | 525   | 173   | 120  | 39    | 20     | 19   |
| 7           | 48    | 25      | 20    | 9.0   | 9.5   | 30   | 520   | 176   | 123  | 38    | 19     | 18   |
| 8           | 46    | 25      | 20    | 9.0   | 9.5   | 33   | 497   | 180   | 118  | 37    | 18     | 18   |
| 9           | 46    | 24      | 17    | 8.5   | 9.6   | 32   | 448   | 183   | 119  | 41    | 18     | 18   |
| 10          | 44    | 23      | 14    | 8.5   | 10    | 30   | 396   | 185   | 115  | 42    | 18     | 17   |
| 11          | 42    | 24      | 13    | 8.5   | 11    | 29   | 364   | 187   | 106  | 50    | 17     | 17   |
| 12          | 41    | 26      | 12    | 8.5   | 11    | 29   | 341   | 192   | 100  | 42    | 17     | 17   |
| 13          | 38    | 28      | 13    | 9.5   | 11    | 30   | 324   | 195   | 93   | 38    | 16     | 16   |
| 14          | 37    | 29      | 13    | 9.2   | 11    | 32   | 281   | 204   | 88   | 35    | 17     | 16   |
| 15          | 35    | 30      | 13    | 9.0   | 10    | 31   | 251   | 207   | 84   | 33    | 28     | 17   |
| 16          | 34    | 29      | 14    | 8.0   | 10    | 30   | 221   | 207   | 83   | 32    | 27     | 18   |
| 17          | 34    | 27      | 14    | 9.0   | 10    | 31   | 192   | 209   | 78   | 41    | 22     | 17   |
| 18          | 33    | 25      | 13    | 9.6   | 10    | 33   | 192   | 227   | 73   | 40    | 19     | 17   |
| 19          | 38    | 24      | 13    | 9.4   | 10    | 34   | 177   | 225   | 70   | 36    | 18     | 17   |
| 20          | 52    | 25      | 13    | 8.8   | 10    | 32   | 128   | 219   | 68   | 32    | 17     | 17   |
| 21          | 47    | 26      | 13    | 8.2   | 9.8   | 31   | 109   | 239   | 64   | 33    | 17     | 17   |
| 22          | 42    | 24      | 13    | 8.6   | 9.5   | 30   | 124   | 226   | 61   | 46    | 17     | 17   |
| 23          | 39    | 21      | 12    | 8.3   | 9.5   | 31   | 152   | 200   | 60   | 38    | 17     | 17   |
| 24          | 36    | 20      | 12    | 8.6   | 9.5   | 34   | 182   | 185   | 58   | 33    | 24     | 17   |
| 25          | 34    | 20      | 12    | 8.8   | 10    | 38   | 186   | 180   | 55   | 30    | 35     | 16   |
| 26          | 33    | 18      | 11    | 9.0   | 9.5   | 43   | 193   | 177   | 53   | 30    | 26     | 16   |
| 27          | 31    | 18      | 10    | 8.6   | 9.5   | 45   | 200   | 175   | 50   | 29    | 22     | 16   |
| 28          | 30    | 19      | 9.5   | 8.7   | 9.5   | 43   | 224   | 173   | 48   | 30    | 20     | 16   |
| 29          | 28    | 20      | 9.8   | 8.4   | ---   | 41   | 220   | 166   | 49   | 30    | 19     | 16   |
| 30          | 28    | 20      | 9.5   | 8.4   | ---   | 42   | 219   | 158   | 58   | 28    | 17     | 16   |
| 31          | 29    | ---     | 9.8   | 8.4   | ---   | 45   | ---   | 147   | ---  | 26    | 17     | ---  |
| TOTAL       | 1245  | 727     | 433.6 | 274.4 | 276.3 | 962  | 7775  | 6031  | 2658 | 1162  | 634    | 514  |
| MEAN        | 40.2  | 24.2    | 14.0  | 8.85  | 9.87  | 31.0 | 259   | 195   | 88.6 | 37.5  | 20.5   | 17.1 |
| MAX         | 52    | 30      | 20    | 9.8   | 11    | 45   | 525   | 252   | 143  | 55    | 35     | 22   |
| MIN         | 28    | 18      | 9.5   | 8.0   | 8.4   | 10   | 61    | 147   | 48   | 26    | 16     | 16   |
| AC-FT       | 2470  | 1440    | 860   | 544   | 548   | 1910 | 15420 | 11960 | 5270 | 2300  | 1260   | 1020 |
| CAL YR 1986 | TOTAL | 70873.6 |       | MEAN  | 194   | MAX  | 2000  | MIN   | 9.5  | AC-FT | 140600 |      |
| WTR YR 1987 | TOTAL | 22692.3 |       | MEAN  | 62.2  | MAX  | 525   | MIN   | 8.0  | AC-FT | 45010  |      |

## GREEN RIVER BASIN

09224050 HAMS FORK NEAR DIAMONDVILLE, WY

LOCATION.--Lat 41°45'06", long 110°31'57", in NW1/4 SE1/4 SW1/4 sec.36, T.21 N., R.116 W., Lincoln County, Hydrologic Unit 14040107, at bridge on U.S. Highway 30N, 1.9 mi south of Diamondville, and 2.8 mi south of Kemmerer.

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|-----------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT 29... | 1700 | 56                                              | 520                                               | 8.8                            | 8.0                                  | 600                                                  | 12.4                                |
| APR 22... | 0910 | 105                                             | 500                                               | 8.3                            | 7.0                                  | 590                                                  | 9.1                                 |
| JAN 07... | 1545 | 37                                              | 510                                               | 8.2                            | 0.0                                  | 595                                                  | 11.1                                |
| JUL 28... | 1600 | 26                                              | 550                                               | 8.8                            | 24.0                                 | 595                                                  | 7.4                                 |

| DATE      | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|-----------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT 29... | 134                                                            | 31                                                             | 0.2                                                  | 0.03                                                 | 0.57                                                 | 0.6                                                                | 0.13                                        |
| APR 22... | 97                                                             | K8                                                             | <0.1                                                 | 0.02                                                 | 0.48                                                 | 0.5                                                                | 0.08                                        |
| JAN 07... | 98                                                             | 160                                                            | 0.4                                                  | 0.10                                                 | 0.50                                                 | 0.6                                                                | 0.11                                        |
| JUL 28... | 114                                                            | 27                                                             | <0.1                                                 | <0.01                                                | --                                                   | 0.6                                                                | 0.18                                        |

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

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|-----------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUL 28... | 1600 | 26                                              | 24.0                                 | <0.01                                                           | 0.01                                                         | 0.06                      | <0.01                      | <0.01                      | <0.01                      |

## 09224700 BLACKS FORK NEAR LITTLE AMERICA, WY

LOCATION.--Lat 41°32'46", long 109°41'34", in NE1/4 NE1/4 NE1/4 sec.15, T.18 N., R.109 W., Sweetwater County, Hydrologic Unit 14040107, on right bank 200 ft upstream from bridge on U.S. Highway 30, 4.2 mi upstream from Meadow Springs Wash, and 8.5 mi east of Little America.

DRAINAGE AREA.--3,100 mi<sup>2</sup>, approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,127.66 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 7 to Mar. 30, and June 12-17. Records fair except those for estimated daily discharges, which are poor. Natural flow of stream affected by regulation from Meeks Cabin Reservoir, capacity, 32,470 acre-ft, since June 1971, Viva Naughton Reservoir, capacity, 42,400 acre-ft, from State Line Reservoir, capacity, 14,000 acre-ft, since April 1980, numerous smaller reservoirs, and diversions for irrigation of about 76,100 acres upstream from station.

AVERAGE DISCHARGE.--25 years, 376 ft<sup>3</sup>/s, 272,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,980 ft<sup>3</sup>/s, June 13, 1965, gage height, 10.90 ft; no flow Sept. 20-26, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,150 ft<sup>3</sup>/s, June 12, gage height, 6.10 ft, from floodmark; maximum gage height, 6.81 ft, Mar. 17 (backwater from ice); minimum daily discharge, 30 ft<sup>3</sup>/s, Sept. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR   | APR   | MAY   | JUN   | JUL   | AUG    | SEP  |
|-------------|-------|--------|------|------|------|-------|-------|-------|-------|-------|--------|------|
| 1           | 260   | 239    | 190  | 120  | 100  | 100   | 304   | 366   | 607   | 150   | 218    | 68   |
| 2           | 266   | 252    | 147  | 115  | 120  | 110   | 337   | 413   | 488   | 187   | 184    | 64   |
| 3           | 264   | 252    | 125  | 115  | 130  | 125   | 430   | 431   | 368   | 197   | 148    | 59   |
| 4           | 294   | 251    | 130  | 115  | 140  | 130   | 553   | 464   | 321   | 185   | 123    | 59   |
| 5           | 304   | 258    | 145  | 125  | 135  | 138   | 606   | 360   | 307   | 179   | 108    | 73   |
| 6           | 266   | 263    | 170  | 135  | 125  | 148   | 658   | 284   | 262   | 177   | 100    | 97   |
| 7           | 239   | 260    | 178  | 145  | 115  | 155   | 739   | 241   | 230   | 178   | 101    | 82   |
| 8           | 226   | 240    | 158  | 140  | 110  | 169   | 784   | 238   | 231   | 176   | 97     | 58   |
| 9           | 213   | 180    | 132  | 145  | 110  | 185   | 688   | 273   | 312   | 162   | 99     | 56   |
| 10          | 206   | 130    | 115  | 140  | 110  | 230   | 631   | 311   | 616   | 153   | 86     | 54   |
| 11          | 209   | 150    | 107  | 130  | 120  | 245   | 537   | 292   | 934   | 161   | 77     | 49   |
| 12          | 217   | 174    | 110  | 130  | 130  | 250   | 451   | 282   | 1050  | 170   | 69     | 46   |
| 13          | 239   | 170    | 115  | 105  | 130  | 230   | 441   | 365   | 800   | 225   | 66     | 42   |
| 14          | 248   | 190    | 110  | 107  | 130  | 220   | 419   | 332   | 640   | 197   | 71     | 41   |
| 15          | 247   | 215    | 107  | 115  | 125  | 230   | 356   | 310   | 510   | 170   | 91     | 41   |
| 16          | 214   | 210    | 118  | 118  | 115  | 220   | 317   | 351   | 415   | 154   | 185    | 38   |
| 17          | 203   | 235    | 128  | 95   | 110  | 240   | 365   | 363   | 330   | 153   | 234    | 37   |
| 18          | 217   | 220    | 125  | 80   | 105  | 260   | 433   | 555   | 312   | 145   | 163    | 36   |
| 19          | 243   | 230    | 110  | 78   | 100  | 290   | 436   | 791   | 342   | 142   | 115    | 35   |
| 20          | 261   | 218    | 110  | 70   | 100  | 280   | 435   | 822   | 304   | 153   | 93     | 33   |
| 21          | 278   | 225    | 110  | 78   | 100  | 270   | 427   | 843   | 252   | 145   | 83     | 31   |
| 22          | 293   | 220    | 100  | 77   | 100  | 285   | 351   | 830   | 225   | 143   | 84     | 30   |
| 23          | 277   | 208    | 105  | 75   | 100  | 280   | 290   | 867   | 203   | 150   | 96     | 31   |
| 24          | 291   | 210    | 105  | 70   | 97   | 275   | 272   | 785   | 172   | 166   | 109    | 33   |
| 25          | 314   | 218    | 110  | 72   | 96   | 280   | 309   | 679   | 158   | 167   | 112    | 36   |
| 26          | 281   | 230    | 115  | 84   | 96   | 285   | 376   | 597   | 151   | 138   | 122    | 38   |
| 27          | 259   | 255    | 110  | 92   | 96   | 250   | 399   | 582   | 151   | 126   | 123    | 40   |
| 28          | 242   | 270    | 115  | 95   | 96   | 250   | 367   | 619   | 142   | 138   | 109    | 38   |
| 29          | 237   | 230    | 120  | 74   | ---  | 240   | 342   | 639   | 133   | 149   | 100    | 42   |
| 30          | 236   | 245    | 115  | 81   | ---  | 230   | 346   | 659   | 138   | 152   | 88     | 43   |
| 31          | 238   | ---    | 118  | 90   | ---  | 285   | ---   | 704   | ---   | 171   | 78     | ---  |
| TOTAL       | 7782  | 6648   | 3853 | 3211 | 3141 | 6885  | 13399 | 15648 | 11104 | 5059  | 3532   | 1430 |
| MEAN        | 251   | 222    | 124  | 104  | 112  | 222   | 447   | 505   | 370   | 163   | 114    | 47.7 |
| MAX         | 314   | 270    | 190  | 145  | 140  | 290   | 784   | 867   | 1050  | 225   | 234    | 97   |
| MIN         | 203   | 130    | 100  | 70   | 96   | 100   | 272   | 238   | 133   | 126   | 66     | 30   |
| AC-FT       | 15440 | 13190  | 7640 | 6370 | 6230 | 13660 | 26580 | 31040 | 22020 | 10030 | 7010   | 2840 |
| CAL YR 1986 | TOTAL | 233036 |      | MEAN | 638  | MAX   | 5300  | MIN   | 65    | AC-FT | 462200 |      |
| WTR YR 1987 | TOTAL | 81692  |      | MEAN | 224  | MAX   | 1050  | MIN   | 30    | AC-FT | 162000 |      |



09224700 BLACKS FORK NEAR LITTLE AMERICA, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1951 to current year.

WATER TEMPERATURES: March 1951 to September 1963, December 1964 to current year.

REMARKS.--Published as "near Green River" prior to October 1953 and as "near Marston" October 1953 to September 1964. Partial record of specific conductance and temperature for water years 1979 and 1980 are available at District Office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,010 microsiemens, Oct. 1, 1953; minimum daily, 194 microsiemens, May 17, 1984.

WATER TEMPERATURES: Maximum, 40.0°C, July 31, Aug. 1, 2, 3, 4, 1984; minimum, 0.0°C, on many days during winter period most years.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,640 microsiemens, Sept. 30; minimum daily, 693 microsiemens, May 3.

WATER TEMPERATURES: Maximum, 27.5°C, July 28; minimum, 0.0°C, on many days November through March.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>LAB<br>(US/CM) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CAC03) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LITY<br>LAB<br>(MG/L<br>AS<br>CAC03) |
|-------|------|-------------------------------------------------|---------------------------------------------------|----------------------------------------------------------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-----------------------------------------------|
| OCT   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 01... | 0915 | 252                                             | --                                                | 1400                                                     | 5.5                                  | 500                                    | 120                                          | 48                                                   | 150                                          | 3                                       | 3.2                                                 | 220                                           |
| 29... | 1400 | 237                                             | --                                                | 1450                                                     | 8.0                                  | 480                                    | 110                                          | 49                                                   | 150                                          | 3                                       | 3.6                                                 | 230                                           |
| NOV   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 14... | 0800 | 140                                             | --                                                | 1640                                                     | 0.0                                  | 580                                    | 140                                          | 56                                                   | 160                                          | 3                                       | 3.6                                                 | 260                                           |
| 25... | 1345 | 218                                             | --                                                | 1380                                                     | 0.0                                  | 440                                    | 100                                          | 45                                                   | 140                                          | 3                                       | 2.6                                                 | 230                                           |
| DEC   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 17... | 1545 | 128                                             | --                                                | 1690                                                     | 0.0                                  | 600                                    | 140                                          | 60                                                   | 160                                          | 3                                       | 4.4                                                 | 280                                           |
| JAN   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 30... | 1000 | 81                                              | 1220                                              | --                                                       | 0.0                                  | 460                                    | 110                                          | 44                                                   | 110                                          | 2                                       | 3.4                                                 | 230                                           |
| MAR   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 31... | 1610 | 330                                             | 1520                                              | --                                                       | 4.0                                  | 440                                    | 100                                          | 47                                                   | 160                                          | 3                                       | 4.5                                                 | 240                                           |
| JUN   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 17... | 1310 | 332                                             | 1190                                              | --                                                       | 19.5                                 | 400                                    | 94                                           | 40                                                   | 150                                          | 3                                       | 4.8                                                 | 250                                           |
| AUG   |      |                                                 |                                                   |                                                          |                                      |                                        |                                              |                                                      |                                              |                                         |                                                     |                                               |
| 19... | 1000 | 130                                             | 1700                                              | --                                                       | 15.0                                 | 370                                    | 95                                           | 33                                                   | 250                                          | 6                                       | 4.7                                                 | 190                                           |

| DATE  | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | BORON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS B) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE) |
|-------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|--------------------------------------------|--------------------------------------------|
| OCT   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                            |                                            |
| 01... | 460                                           | 63                                                  | 0.4                                                | 8.6                                               | 990                                                            | 1.3                                                 | 670                                               | <0.1                                                          | 0.20                                        | --                                         | --                                         |
| 29... | 480                                           | 72                                                  | 0.6                                                | 7.5                                               | 1000                                                           | 1.4                                                 | 647                                               | 0.5                                                           | 0.22                                        | --                                         | --                                         |
| NOV   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                            |                                            |
| 14... | 520                                           | 70                                                  | 0.5                                                | 9.1                                               | 1100                                                           | 1.5                                                 | 422                                               | <0.1                                                          | 0.05                                        | --                                         | --                                         |
| 25... | 400                                           | 61                                                  | 0.4                                                | 8.0                                               | 890                                                            | 1.2                                                 | 527                                               | 0.1                                                           | 0.09                                        | --                                         | --                                         |
| DEC   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                            |                                            |
| 17... | 530                                           | 77                                                  | 0.6                                                | 9.2                                               | 1100                                                           | 1.6                                                 | 397                                               | 1.0                                                           | --                                          | 290                                        | 60                                         |
| JAN   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                            |                                            |
| 30... | 360                                           | 50                                                  | 0.5                                                | 6.9                                               | 820                                                            | 1.1                                                 | 180                                               | 1.2                                                           | --                                          | 270                                        | 60                                         |
| MAR   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                            |                                            |
| 31... | 410                                           | 86                                                  | 0.4                                                | 10                                                | 960                                                            | 1.3                                                 | 857                                               | 0.2                                                           | --                                          | 250                                        | 50                                         |
| JUN   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                            |                                            |
| 17... | 360                                           | 53                                                  | 0.5                                                | 13                                                | 870                                                            | 1.2                                                 | 776                                               | 0.1                                                           | --                                          | 300                                        | <50                                        |
| AUG   |                                               |                                                     |                                                    |                                                   |                                                                |                                                     |                                                   |                                                               |                                             |                                            |                                            |
| 19... | 590                                           | 82                                                  | 0.6                                                | 13                                                | 1200                                                           | 1.6                                                 | 415                                               | 0.5                                                           | --                                          | 390                                        | 140                                        |

09224700 BLACKS FORK RIVER NEAR LITTLE AMERICA, WY--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY  | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  | JUL  | AUG  | SEP  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1    | 1460 | 1500 | 1360 | 1400 | 1270 | 1230 | 1270 | 749  | 1110 | 1330 | 1460 | 1940 |
| 2    | 1410 | 1480 | 1370 | 1390 | 1280 | 1180 | 1340 | 715  | 1080 | 1310 | 1370 | 2080 |
| 3    | 1360 | 1460 | 1410 | 1350 | 1230 | 1150 | 1350 | 693  | 1110 | 1270 | 1350 | 2160 |
| 4    | 1340 | 1420 | 1420 | 1330 | 1150 | 1140 | 1130 | 802  | 1150 | 1270 | 1380 | 2130 |
| 5    | 1430 | 1410 | 1400 | 1340 | 1100 | 1110 | 955  | 831  | 1150 | 1310 | 1480 | 2150 |
| 6    | 1490 | 1440 | 1360 | 1310 | 1090 | 1040 | 890  | 810  | 1140 | 1380 | ---  | 1980 |
| 7    | 1500 | 1430 | 1330 | 1290 | 1130 | 1010 | 839  | 865  | 1150 | 1410 | ---  | 1910 |
| 8    | 1530 | 1440 | 1310 | 1250 | 1140 | 994  | 786  | 894  | 1230 | 1410 | ---  | 1750 |
| 9    | 1560 | 1500 | 1280 | 1200 | 1120 | 983  | 818  | 851  | 1290 | 1410 | ---  | 1740 |
| 10   | 1580 | 1520 | 1350 | 1190 | 1110 | 973  | 830  | 741  | 1340 | 1400 | ---  | 1870 |
| 11   | 1610 | 1550 | 1440 | 1160 | 1100 | 955  | 841  | 810  | 1120 | 1420 | ---  | 1950 |
| 12   | 1640 | 1480 | 1470 | 1170 | 1090 | 899  | 829  | 751  | 1070 | 1430 | 1760 | 2040 |
| 13   | 1560 | 1540 | 1460 | 1190 | 1060 | 882  | 880  | 722  | 1070 | 1470 | 1850 | 2090 |
| 14   | 1500 | 1560 | 1620 | 1230 | 1040 | 905  | 913  | 741  | 1110 | 1450 | 1820 | 2130 |
| 15   | 1510 | 1520 | 1700 | 1250 | 1060 | 945  | 932  | 773  | 1150 | 1400 | 1770 | 2100 |
| 16   | 1540 | 1410 | 1730 | 1230 | 1080 | 1030 | 959  | 798  | 1140 | 1400 | 1540 | 2010 |
| 17   | 1480 | 1330 | 1700 | 1220 | 1120 | 1010 | 983  | 764  | 1190 | 1360 | 1390 | 1960 |
| 18   | 1520 | 1350 | 1530 | 1240 | 1140 | ---  | 968  | 697  | 1180 | 1420 | 1540 | 1920 |
| 19   | 1520 | 1270 | 1420 | 1240 | 1190 | ---  | 891  | 751  | 1210 | 1410 | 1700 | 1920 |
| 20   | 1470 | 1310 | 1400 | 1270 | 1240 | ---  | 854  | 763  | 1210 | 1430 | 1760 | 1950 |
| 21   | 1570 | 1290 | 1390 | 1320 | 1260 | ---  | 809  | 741  | 1170 | 1490 | 1670 | 2010 |
| 22   | 1600 | 1370 | 1390 | 1360 | 1260 | ---  | 780  | 750  | 1210 | 1440 | 1590 | 2010 |
| 23   | 1570 | 1340 | 1390 | 1380 | 1240 | ---  | 856  | 880  | 1250 | 1410 | 1510 | 2010 |
| 24   | 1530 | 1080 | 1440 | 1380 | 1240 | ---  | 924  | 893  | 1300 | 1400 | 1500 | 2010 |
| 25   | 1610 | 1250 | 1430 | 1340 | 1260 | ---  | 948  | 963  | 1340 | 1410 | 1360 | 2020 |
| 26   | 1540 | 1330 | 1390 | 1310 | 1250 | ---  | 940  | 964  | 1390 | 1420 | 1480 | 2020 |
| 27   | 1490 | 1430 | 1360 | 1270 | 1280 | ---  | 805  | 977  | 1400 | 1400 | 1510 | 2290 |
| 28   | 1480 | 1390 | 1330 | 1250 | 1260 | ---  | 757  | 1010 | 1440 | 1400 | 1780 | 2450 |
| 29   | 1490 | 1360 | 1300 | 1240 | ---  | ---  | 763  | 994  | 1500 | 1470 | 1890 | 2530 |
| 30   | 1510 | 1340 | 1300 | 1220 | ---  | ---  | 759  | 979  | 1420 | 1470 | 1910 | 2640 |
| 31   | 1520 | ---  | 1360 | 1230 | ---  | 1410 | ---  | 1090 | ---  | 1430 | 1900 | ---  |
| MEAN | 1510 | 1400 | 1420 | 1280 | 1170 | ---  | 920  | 831  | 1220 | 1400 | ---  | 2060 |
| MAX  | 1640 | 1560 | 1730 | 1400 | 1280 | ---  | 1350 | 1090 | 1500 | 1490 | ---  | 2640 |
| MIN  | 1340 | 1080 | 1280 | 1160 | 1040 | ---  | 757  | 693  | 1070 | 1270 | ---  | 1740 |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY   | MAX     | MIN  | MAX      | MIN  | MAX      | MIN  | MAX     | MIN  | MAX      | MIN  | MAX       | MIN  |
|-------|---------|------|----------|------|----------|------|---------|------|----------|------|-----------|------|
|       | OCTOBER |      | NOVEMBER |      | DECEMBER |      | JANUARY |      | FEBRUARY |      | MARCH     |      |
| 1     | 7.0     | 4.0  | 3.0      | 1.5  | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 2     | 5.5     | 4.0  | 3.5      | .0   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 3     | 7.0     | 4.0  | 4.0      | .5   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 4     | 7.5     | 4.0  | 4.5      | 1.0  | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 5     | 9.0     | 6.0  | 4.5      | 1.5  | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 6     | 10.5    | 6.0  | 3.0      | 1.0  | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 7     | 12.0    | 7.0  | 1.0      | .0   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 8     | 11.5    | 7.5  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 9     | 12.0    | 7.5  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 10    | 11.0    | 6.0  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 11    | 5.5     | .5   | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 12    | 4.0     | .0   | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 13    | 5.0     | 1.0  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 14    | 6.5     | 2.0  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 15    | 7.5     | 3.0  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 16    | 8.5     | 3.5  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 17    | 8.5     | 4.0  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | .0        | .0   |
| 18    | 9.5     | 6.0  | .5       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | ---       | ---  |
| 19    | 8.0     | 6.5  | 2.0      | .0   | .0       | .0   | .0      | .0   | .0       | .0   | ---       | ---  |
| 20    | 9.5     | 6.0  | .5       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | ---       | ---  |
| 21    | 8.5     | 7.0  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | ---       | ---  |
| 22    | 9.0     | 6.5  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | ---       | ---  |
| 23    | 8.5     | 7.0  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | ---       | ---  |
| 24    | 8.5     | 5.5  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | ---       | ---  |
| 25    | 8.5     | 5.5  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | ---       | ---  |
| 26    | 8.5     | 5.0  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | ---       | ---  |
| 27    | 8.5     | 5.0  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | ---       | ---  |
| 28    | 9.0     | 6.0  | .0       | .0   | .0       | .0   | .0      | .0   | .0       | .0   | ---       | ---  |
| 29    | 8.5     | 5.0  | .0       | .0   | .0       | .0   | .0      | .0   | ---      | ---  | ---       | ---  |
| 30    | 6.5     | 4.0  | .0       | .0   | .0       | .0   | .0      | .0   | ---      | ---  | ---       | ---  |
| 31    | 5.0     | 3.0  | ---      | ---  | .0       | .0   | .0      | .0   | ---      | ---  | 4.5       | ---  |
| MONTH | 12.0    | .0   | 4.5      | .0   | .0       | .0   | .0      | .0   | .0       | .0   | 4.5       | .0   |
|       |         |      |          |      |          |      |         |      |          |      |           |      |
|       | APRIL   |      | MAY      |      | JUNE     |      | JULY    |      | AUGUST   |      | SEPTEMBER |      |
| 1     | 8.0     | 2.0  | 15.5     | 13.0 | 14.5     | 12.5 | 22.5    | 14.5 | 24.0     | 17.5 | 23.0      | 14.0 |
| 2     | 7.5     | 2.5  | 14.0     | 11.0 | 16.0     | 10.5 | 22.0    | 17.0 | 22.0     | 17.0 | 22.5      | 14.5 |
| 3     | 8.0     | 3.5  | 14.0     | 8.5  | 17.5     | 11.0 | 21.0    | 16.0 | 23.0     | 15.5 | 17.5      | 14.5 |
| 4     | 8.0     | 4.0  | 16.0     | 10.5 | 19.5     | 14.0 | 21.5    | 16.0 | 24.5     | 14.5 | 18.5      | 12.5 |
| 5     | 8.5     | 5.0  | 17.5     | 12.0 | 20.0     | 16.0 | ---     | 15.0 | 22.0     | 15.5 | 19.5      | 10.5 |
| 6     | 7.5     | 6.5  | 18.5     | 12.0 | 20.0     | 15.0 | 22.0    | 16.0 | 23.5     | 15.5 | 18.5      | 11.5 |
| 7     | 9.0     | 5.5  | 20.0     | 13.0 | 18.5     | 15.0 | 21.5    | 14.0 | 22.0     | 16.5 | 20.0      | 12.0 |
| 8     | 9.0     | 6.0  | 20.5     | 14.5 | 19.5     | 14.0 | 21.0    | 15.5 | 24.5     | 14.0 | 18.5      | 12.0 |
| 9     | 8.0     | 5.5  | 19.5     | 14.5 | 19.0     | 16.0 | 20.0    | 16.0 | 25.5     | 15.5 | 19.0      | 10.5 |
| 10    | 8.0     | 4.5  | 18.0     | 13.0 | 19.5     | 14.0 | 17.0    | 15.0 | 22.5     | 15.5 | 19.0      | 10.5 |
| 11    | 7.5     | 5.5  | 20.0     | 14.0 | 19.0     | 15.0 | 20.5    | 12.5 | 23.0     | 16.0 | 20.0      | 11.0 |
| 12    | 7.0     | 4.0  | 20.0     | 14.0 | 19.5     | 15.0 | 19.0    | 15.0 | 22.5     | 12.5 | 20.5      | 11.5 |
| 13    | 8.5     | 3.0  | 19.0     | 14.5 | 20.0     | 16.5 | ---     | 16.0 | 19.5     | 13.0 | 18.5      | 12.0 |
| 14    | 10.5    | 5.0  | ---      | 14.5 | ---      | 17.5 | 25.0    | 17.0 | 20.5     | 15.0 | 18.0      | 11.5 |
| 15    | 12.5    | 7.0  | ---      | ---  | 21.5     | ---  | 26.0    | 17.5 | 17.0     | 13.0 | 20.0      | 12.0 |
| 16    | 14.0    | 8.0  | ---      | ---  | ---      | 16.0 | 24.0    | 17.5 | 16.5     | 11.0 | 18.0      | 11.5 |
| 17    | 14.0    | 8.5  | ---      | ---  | ---      | 16.0 | 20.0    | 14.0 | 17.0     | 12.0 | 16.5      | 8.0  |
| 18    | 12.5    | 9.5  | ---      | ---  | ---      | 15.5 | 21.0    | 14.5 | 18.0     | 11.0 | 15.5      | 7.0  |
| 19    | ---     | ---  | ---      | ---  | ---      | 15.5 | 21.5    | 13.0 | 19.5     | 12.0 | 16.0      | 7.5  |
| 20    | ---     | ---  | ---      | ---  | ---      | 14.5 | 21.5    | 15.0 | 20.5     | 14.0 | 16.5      | 7.5  |
| 21    | 10.5    | 4.0  | ---      | 12.5 | ---      | 15.5 | 20.5    | 15.0 | 20.0     | 14.0 | 18.0      | 9.0  |
| 22    | 14.5    | 7.5  | ---      | 12.0 | 20.5     | 15.0 | 24.5    | 14.5 | 23.5     | 14.0 | 19.0      | 9.5  |
| 23    | 17.0    | 10.5 | ---      | 12.5 | 21.0     | 13.5 | 25.5    | 16.0 | 23.0     | 16.0 | 20.0      | 10.0 |
| 24    | 16.5    | 12.0 | ---      | ---  | 22.0     | 15.5 | 26.0    | 17.5 | 18.5     | 16.0 | 19.5      | 10.0 |
| 25    | 15.5    | 11.5 | ---      | 13.5 | ---      | 14.5 | 20.0    | 18.0 | 18.5     | 13.0 | 17.0      | 10.5 |
| 26    | 18.5    | 12.0 | ---      | 11.5 | 25.5     | 16.5 | 24.5    | 16.5 | 19.0     | 12.0 | 17.5      | 11.0 |
| 27    | 19.0    | 13.5 | ---      | 10.0 | 25.5     | 17.0 | 26.0    | 17.0 | 20.0     | 12.0 | 15.0      | 7.0  |
| 28    | 18.5    | 14.5 | ---      | 9.5  | 21.0     | 17.5 | 27.5    | 19.0 | 20.0     | 13.0 | 15.5      | 5.5  |
| 29    | 18.5    | 13.5 | 12.0     | 10.5 | 21.5     | 15.5 | 26.0    | 20.5 | 20.5     | 12.5 | 16.0      | 6.5  |
| 30    | 18.0    | 13.0 | ---      | 10.5 | 21.0     | 15.5 | 24.0    | 19.0 | 21.0     | 13.0 | 17.0      | 7.5  |
| 31    | ---     | ---  | ---      | ---  | ---      | ---  | 23.0    | 18.5 | 22.5     | 12.5 | ---       | ---  |
| MONTH | 19.0    | 2.0  | 20.5     | 8.5  | 25.5     | 10.5 | 27.5    | 12.5 | 25.5     | 11.0 | 23.0      | 5.5  |
| YEAR  | 27.5    | .0   |          |      |          |      |         |      |          |      |           |      |

## 09229500 HENRYS FORK NEAR MANILA, UT

LOCATION.--Lat 41°00'45", long 109°40'20", in NW1/4 NW1/4 sec.23, T.12 N., R.109 W., Sweetwater County, WY, Hydrologic Unit 14040106, on right bank 0.8 mi north of Wyoming-Utah State line, 1.3 mi upstream from normal high-water line of Flaming Gorge Reservoir at elevation 6,045 ft, and 3.0 mi northeast of Manila, UT.

DRAINAGE AREA.--520 mi<sup>2</sup>, approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1928 to current year. Prior to October 1971, published as "at Linwood, UT."

REVISED RECORDS.--WSP 1443: 1955. WDR WY-76-2: 1970.

GAGE.--Water-stage recorder. Elevation of gage is 6,060 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1957, nonrecording gages or water-stage recorder at several sites about 2.0 mi downstream at various datums. Oct. 1, 1957, to Dec. 2, 1965, water-stage recorders at sites about 1.0 mi upstream at different datums.

REMARKS.--Estimated daily discharges: Nov. 28-30, Dec. 2 to Mar. 20, and Apr. 30 to May 12. Records fair except those for estimated daily discharges, which are poor. Peoples Irrigation Canal diverts 5.9 mi upstream. Natural flow of stream affected by transbasin diversions, small storage reservoirs, diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--59 years, 86.5 ft<sup>3</sup>/s, 62,670 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge determined, 6,750 ft<sup>3</sup>/s, Aug. 3, 1936, gage height, 7.19 ft, site and datum then in use, from floodmarks, from rating curve extended above 570 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; higher discharge occurred July 15, 1959, gage height, 9.42 ft, site and datum then in use, discharge not determined; no flow for several days in 1933-35, 1939-40.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 959 ft<sup>3</sup>/s, May 17, gage height, 5.74 ft; minimum daily, 15 ft<sup>3</sup>/s, Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY   | JUN   | JUL   | AUG   | SEP  |
|-------------|-------|-------|------|------|------|------|------|-------|-------|-------|-------|------|
| 1           | 92    | 96    | 65   | 41   | 54   | 52   | 132  | 135   | 181   | 118   | 122   | 34   |
| 2           | 106   | 97    | 64   | 42   | 62   | 53   | 145  | 140   | 169   | 164   | 89    | 34   |
| 3           | 128   | 101   | 62   | 43   | 65   | 55   | 119  | 130   | 147   | 180   | 77    | 36   |
| 4           | 131   | 103   | 58   | 43   | 60   | 56   | 147  | 125   | 145   | 156   | 62    | 49   |
| 5           | 119   | 101   | 54   | 43   | 60   | 60   | 159  | 120   | 171   | 131   | 57    | 46   |
| 6           | 110   | 100   | 51   | 43   | 61   | 66   | 272  | 118   | 220   | 98    | 57    | 40   |
| 7           | 102   | 94    | 49   | 43   | 63   | 70   | 267  | 119   | 253   | 96    | 73    | 36   |
| 8           | 97    | 77    | 47   | 42   | 65   | 78   | 258  | 120   | 396   | 79    | 84    | 33   |
| 9           | 95    | 82    | 44   | 40   | 66   | 74   | 254  | 122   | 424   | 77    | 70    | 32   |
| 10          | 93    | 84    | 43   | 37   | 67   | 70   | 150  | 140   | 413   | 82    | 61    | 30   |
| 11          | 94    | 79    | 43   | 37   | 69   | 70   | 139  | 170   | 291   | 115   | 63    | 30   |
| 12          | 95    | 94    | 43   | 37   | 70   | 68   | 134  | 215   | 289   | 90    | 66    | 30   |
| 13          | 99    | 82    | 43   | 37   | 74   | 68   | 92   | 318   | 246   | 62    | 58    | 29   |
| 14          | 100   | 88    | 43   | 35   | 75   | 67   | 91   | 434   | 214   | 55    | 83    | 29   |
| 15          | 98    | 91    | 43   | 34   | 76   | 61   | 127  | 486   | 216   | 47    | 122   | 30   |
| 16          | 94    | 92    | 43   | 33   | 75   | 58   | 157  | 634   | 241   | 40    | 142   | 30   |
| 17          | 93    | 94    | 43   | 32   | 74   | 53   | 140  | 827   | 240   | 53    | 100   | 27   |
| 18          | 93    | 85    | 43   | 34   | 73   | 53   | 138  | 803   | 194   | 83    | 62    | 28   |
| 19          | 105   | 95    | 42   | 35   | 71   | 50   | 124  | 710   | 167   | 95    | 49    | 18   |
| 20          | 112   | 84    | 42   | 35   | 69   | 49   | 98   | 578   | 144   | 73    | 46    | 20   |
| 21          | 112   | 89    | 42   | 36   | 68   | 49   | 94   | 496   | 148   | 64    | 45    | 25   |
| 22          | 113   | 87    | 42   | 37   | 66   | 53   | 88   | 470   | 139   | 62    | 51    | 25   |
| 23          | 136   | 80    | 41   | 39   | 65   | 58   | 98   | 330   | 121   | 54    | 52    | 26   |
| 24          | 120   | 90    | 41   | 42   | 64   | 55   | 113  | 293   | 104   | 45    | 53    | 22   |
| 25          | 107   | 95    | 40   | 48   | 64   | 59   | 117  | 271   | 85    | 37    | 72    | 16   |
| 26          | 101   | 81    | 40   | 52   | 60   | 53   | 111  | 263   | 85    | 37    | 70    | 15   |
| 27          | 98    | 76    | 40   | 54   | 56   | 56   | 113  | 275   | 80    | 43    | 57    | 16   |
| 28          | 96    | 74    | 40   | 55   | 52   | 49   | 109  | 240   | 71    | 61    | 53    | 16   |
| 29          | 94    | 72    | 40   | 56   | ---  | 56   | 120  | 443   | 91    | 114   | 46    | 16   |
| 30          | 87    | 68    | 40   | 54   | ---  | 51   | 128  | 352   | 108   | 215   | 40    | 24   |
| 31          | 90    | ---   | 40   | 52   | ---  | 75   | ---  | 252   | ---   | 145   | 36    | ---  |
| TOTAL       | 3210  | 2631  | 1411 | 1291 | 1844 | 1845 | 4234 | 10129 | 5793  | 2771  | 2118  | 842  |
| MEAN        | 104   | 87.7  | 45.5 | 41.6 | 65.9 | 59.5 | 141  | 327   | 193   | 89.4  | 68.3  | 28.1 |
| MAX         | 136   | 103   | 65   | 56   | 76   | 78   | 272  | 827   | 424   | 215   | 142   | 49   |
| MIN         | 87    | 68    | 40   | 32   | 52   | 49   | 88   | 118   | 71    | 37    | 36    | 15   |
| AC-FT       | 6370  | 5220  | 2800 | 2560 | 3660 | 3660 | 8400 | 20090 | 11490 | 5500  | 4200  | 1670 |
| CAL YR 1986 | TOTAL | 45500 |      | MEAN | 125  | MAX  | 1120 | MIN   | 19    | AC-FT | 90250 |      |
| WTR YR 1987 | TOTAL | 38119 |      | MEAN | 104  | MAX  | 827  | MIN   | 15    | AC-FT | 75610 |      |

09229500 HENRYS FORK NEAR MANILA, UT--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1951 to September 1979.

WATER TEMPERATURES: March 1951 to September 1979.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUL<br>08... | 0945 | 76                                              | 14.0                                 | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>31... | 1700 | E60                                             | 15.0                                 | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

E-Estimate.

## 09234400 FLAMING GORGE RESERVOIR AT FLAMING GORGE DAM, UT

LOCATION.--Lat 40°54'23", long 109°25'15", in NW1/4 NE1/4 sec.15, T.2 N., R.22 E., Daggett County, Hydrologic Unit 14040106, at Flaming Gorge Dam on Green River, 1.8 mi southwest of Dutch John, and 4.9 mi northeast of Greendale.

DRAINAGE AREA.--19,350 mi<sup>2</sup>, of which about 4,260 mi<sup>2</sup>, including 3,959 mi<sup>2</sup> in Great Divide Basin in southern Wyoming, is probably noncontributing.

PERIOD OF RECORD.--November 1962 to current year.

REVISED RECORDS.--WDR UT-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by Bureau of Reclamation). Prior to Jan. 1, 1964, on left bank 600 ft upstream from face of dam.

REMARKS.--Records excellent. Reservoir is formed by concrete arch-type dam; storage began Nov. 1, 1962; mass concrete of dam completed Nov. 15, 1962. Total capacity, 3,789,000 acre-ft, consisting of the following: Dead storage, 39,700 acre-ft below elevation 5,740 ft; inactive usable storage, 233,500 acre-ft between elevations 5,740 ft and 5,871 ft; active usable storage, 3,516,000 acre-ft between elevations 5,871 ft and 6,040 ft (top of conservation pool). Reservoir is used for flood control, storage replacement to meet downstream requirements under the Colorado River Compact of 1922, and power development. Figures given herein represent usable contents. Transbasin diversions and diversions for irrigation upstream from station.

COOPERATION.--Records provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 3,911,000 acre-ft, July 13, 1983, elevation, 6,043.80 ft; minimum, 582,900 acre-ft, Apr. 26, 1965, elevation, 5908.90 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 3,640,000 acre-ft, Oct. 2-4, elevation, 6,037.38 ft; minimum observed, 2,964,000 acre-ft, Mar. 6, elevation, 6,019.64 ft.

Capacity table (elevation, in feet, and usable contents, in acre-feet)

|       |           |       |           |
|-------|-----------|-------|-----------|
| 6,015 | 2,804,000 | 6,030 | 3,346,000 |
| 6,020 | 2,977,000 | 6,035 | 3,543,000 |
| 6,025 | 3,157,000 | 6,040 | 3,749,000 |

RESERVOIR STORAGE, IN THOUSANDS OF AC-FT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
INSTANTANEOUS OBSERVATIONS

| DAY | OCT     | NOV     | DEC     | JAN     | FEB     | MAR     | APR     | MAY     | JUN     | JUL     | AUG     | SEP     |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1   | 3638    | 3581    | 3432    | 3249    | 3094    | 2968    | 2984    | 3140    | 3377    | 3502    | 3546    | 3536    |
| 2   | 3640    | 3576    | 3432    | 3242    | 3090    | 2967    | 2984    | 3144    | 3383    | 3500    | 3549    | 3535    |
| 3   | 3640    | 3573    | 3432    | 3236    | 3085    | 2966    | 2984    | 3144    | 3388    | 3498    | 3550    | 3535    |
| 4   | 3640    | 3568    | 3428    | 3229    | 3081    | 2967    | 2984    | 3146    | 3393    | 3497    | 3550    | 3535    |
| 5   | 3639    | 3567    | 3421    | 3222    | 3076    | 2966    | 2988    | 3147    | 3397    | 3499    | 3553    | 3534    |
| 6   | 3638    | 3567    | 3418    | 3217    | 3073    | 2964    | 2992    | 3148    | 3403    | 3499    | 3554    | 3534    |
| 7   | 3638    | 3562    | 3412    | 3211    | 3068    | 2965    | 2999    | 3151    | 3405    | 3498    | 3554    | 3533    |
| 8   | 3638    | 3559    | 3406    | 3205    | 3064    | 2966    | 3007    | 3158    | 3408    | 3497    | 3555    | 3531    |
| 9   | 3638    | 3554    | 3400    | 3198    | 3058    | 2967    | 3015    | 3159    | 3413    | 3494    | 3557    | 3528    |
| 10  | 3638    | 3548    | 3394    | 3192    | 3053    | 2968    | 3021    | 3165    | 3418    | 3494    | 3558    | 3526    |
| 11  | 3636    | 3542    | 3388    | 3186    | 3049    | 2970    | 3030    | 3170    | 3424    | 3493    | 3558    | 3524    |
| 12  | 3630    | 3536    | 3381    | 3180    | 3044    | 2970    | 3033    | 3176    | 3428    | 3492    | 3559    | 3522    |
| 13  | 3626    | 3531    | 3374    | 3176    | 3042    | 2972    | 3039    | 3183    | 3436    | 3493    | 3560    | 3520    |
| 14  | 3623    | 3524    | 3368    | 3172    | 3037    | 2973    | 3044    | 3190    | 3454    | 3495    | 3561    | 3518    |
| 15  | 3620    | 3519    | 3363    | 3167    | 3033    | 2974    | 3049    | 3196    | 3462    | 3498    | 3561    | 3515    |
| 16  | 3616    | 3514    | 3356    | 3163    | 3029    | 2977    | 3053    | 3204    | 3470    | 3500    | 3560    | 3514    |
| 17  | 3615    | 3509    | 3349    | 3158    | 3025    | 2977    | 3058    | 3212    | 3475    | 3502    | 3558    | 3512    |
| 18  | 3614    | 3503    | 3342    | 3153    | 3019    | 2979    | 3065    | 3220    | 3479    | 3503    | 3556    | 3509    |
| 19  | 3611    | 3498    | 3336    | 3150    | 3016    | 2982    | 3072    | 3228    | 3484    | 3507    | 3554    | 3507    |
| 20  | 3608    | 3494    | 3329    | 3145    | 3010    | 2982    | 3080    | 3239    | 3489    | 3508    | 3552    | 3506    |
| 21  | 3606    | 3490    | 3322    | 3140    | 3005    | 2983    | 3088    | 3255    | 3494    | 3512    | 3550    | 3504    |
| 22  | 3605    | 3484    | 3316    | 3135    | 2999    | 2983    | 3094    | 3275    | 3499    | 3515    | 3548    | 3502    |
| 23  | 3603    | 3479    | 3309    | 3130    | 2994    | 2984    | 3099    | 3287    | 3501    | 3516    | 3548    | 3500    |
| 24  | 3602    | 3474    | 3301    | 3127    | 2990    | 2985    | 3104    | 3301    | 3501    | 3519    | 3547    | 3499    |
| 25  | 3599    | 3466    | 3295    | 3124    | 2984    | 2985    | 3110    | 3310    | 3500    | 3520    | 3546    | 3497    |
| 26  | 3597    | 3461    | 3288    | 3119    | 2980    | 2984    | 3113    | 3320    | 3500    | 3526    | 3544    | 3495    |
| 27  | 3594    | 3455    | 3281    | 3115    | 2975    | 2985    | 3117    | 3329    | 3501    | 3530    | 3542    | 3493    |
| 28  | 3592    | 3450    | 3275    | 3112    | 2969    | 2987    | 3122    | 3340    | 3502    | 3534    | 3541    | 3491    |
| 29  | 3588    | 3445    | 3269    | 3107    | ---     | 2986    | 3128    | 3350    | 3503    | 3538    | 3542    | 3488    |
| 30  | 3586    | 3439    | 3263    | 3103    | ---     | 2984    | 3137    | 3361    | 3503    | 3542    | 3539    | 3486    |
| 31  | 3585    | ---     | 3256    | 3100    | ---     | 2983    | ---     | 3372    | ---     | 3545    | 3538    | ---     |
| MAX | 3640    | 3581    | 3432    | 3249    | 3094    | 2987    | 3137    | 3372    | 3503    | 3545    | 3561    | 3536    |
| MIN | 3585    | 3439    | 3256    | 3100    | 2969    | 2964    | 2984    | 3140    | 3377    | 3492    | 3538    | 3486    |
| (+) | 6036.03 | 6032.38 | 6027.66 | 6023.45 | 6019.79 | 6020.19 | 6024.45 | 6030.67 | 6033.99 | 6035.04 | 6034.86 | 6033.58 |
| (+) | -53     | -146    | -183    | -156    | -131    | +14     | +154    | +235    | +131    | +42     | -7      | -52     |

CAL YR 1986 . . . . . (+) +139

WTR YR 1987 . . . . . (+) -152

(+) Elevation, in feet, at end of month.

(+) Change in contents, in thousands of acre-feet.



## 09234500 GREEN RIVER NEAR GREENDALE, UT

LOCATION.--Lat 40°54'30", long 109°25'20", in NW1/4 NW1/4 SE1/4 sec.15. T.2 N., R.22 E., Daggett County, Hydrologic Unit 14040106, Ashley National Forest on right bank 0.5 mi downstream from Flaming Gorge Dam, 2 mi south of Dutch John, 4 mi northeast of Greendale, and 407 mi from mouth.

DRAINAGE AREA.--19,350 mi<sup>2</sup>, approximately, including about 4,260 mi<sup>2</sup> which is probably noncontributing. This noncontributing area includes 3,959 mi<sup>2</sup> in Great Divide Basin in southern Wyoming.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WDR UT-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,594.48 ft NGVD of 1929. Prior to Sept. 2, 1959, water-stage recorder at site 2.2 mi upstream at different datum. Sept. 3, 1959, to Sept. 30, 1985, at datum 5.0 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Flaming Gorge Reservoir 0.5 mi upstream, beginning Nov. 1, 1962 (see station 09234400).

AVERAGE DISCHARGE.--37 years, 2,182 ft<sup>3</sup>/s, 1,581,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 ft<sup>3</sup>/s, June 12, 1957, gage height, 10.60 ft, site and datum then in use; maximum gage height, 14.51 ft, May 12, June 6, 1986, datum then in use; minimum discharge, 2.3 ft<sup>3</sup>/s, Mar. 20, 22, 27, 28, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,110 ft<sup>3</sup>/s, Jan. 3, gage height, 11.34 ft; minimum daily, 742 ft<sup>3</sup>/s, Aug. 6-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT    | NOV     | DEC    | JAN    | FEB    | MAR   | APR   | MAY    | JUN   | JUL     | AUG   | SEP    |
|-------------|--------|---------|--------|--------|--------|-------|-------|--------|-------|---------|-------|--------|
| 1           | 2240   | 3100    | 3770   | 3910   | 3050   | 1460  | 1510  | 1700   | 1290  | 1940    | 1070  | 1390   |
| 2           | 2230   | 3000    | 1750   | 3950   | 3020   | 1600  | 1250  | 2900   | 1280  | 2000    | 1060  | 1860   |
| 3           | 2120   | 3260    | 1200   | 4030   | 3110   | 1270  | 1450  | 3870   | 1140  | 2000    | 1060  | 1240   |
| 4           | 2020   | 3470    | 3120   | 4010   | 2970   | 1240  | 1430  | 3860   | 1290  | 2000    | 1040  | 1470   |
| 5           | 1770   | 1740    | 3760   | 4010   | 3010   | 1460  | 1120  | 3860   | 1380  | 2000    | 803   | 1300   |
| 6           | 1780   | 2470    | 3750   | 3820   | 2940   | 2280  | 1330  | 3860   | 1020  | 2060    | 742   | 1480   |
| 7           | 1810   | 3230    | 3760   | 3610   | 2900   | 1150  | 1000  | 1610   | 1010  | 2110    | 742   | 1470   |
| 8           | 1790   | 3130    | 3770   | 3820   | 3200   | 850   | 1070  | 1600   | 1020  | 2140    | 742   | 2450   |
| 9           | 1890   | 3250    | 3750   | 3830   | 3260   | 1270  | 1650  | 1630   | 1370  | 2190    | 742   | 1830   |
| 10          | 2150   | 3550    | 3800   | 3820   | 3450   | 1150  | 1340  | 1220   | 1280  | 2200    | 742   | 2200   |
| 11          | 2500   | 3920    | 3700   | 3730   | 3290   | 1240  | 1280  | 1310   | 1380  | 2040    | 742   | 1950   |
| 12          | 3100   | 3930    | 3780   | 3350   | 3350   | 1060  | 1380  | 1350   | 1310  | 1890    | 742   | 1820   |
| 13          | 3090   | 3930    | 3760   | 2750   | 2910   | 1010  | 1280  | 1120   | 1250  | 1850    | 744   | 1560   |
| 14          | 3100   | 3930    | 3780   | 2830   | 3190   | 1080  | 1460  | 1380   | 1240  | 1670    | 779   | 1770   |
| 15          | 3100   | 3930    | 3780   | 2880   | 2910   | 1040  | 1310  | 1120   | 1170  | 1470    | 1340  | 1700   |
| 16          | 2880   | 3930    | 3820   | 2850   | 2910   | 1090  | 1760  | 1070   | 1170  | 1470    | 1790  | 1440   |
| 17          | 1910   | 3930    | 3880   | 2730   | 2890   | 1300  | 1430  | 1430   | 1340  | 1470    | 2230  | 1710   |
| 18          | 2960   | 3940    | 3870   | 2900   | 3780   | 1100  | 1350  | 1740   | 1340  | 1480    | 2220  | 1660   |
| 19          | 2910   | 3930    | 3890   | 2890   | 3240   | 1240  | 1330  | 1140   | 1600  | 1460    | 2180  | 1790   |
| 20          | 3040   | 3940    | 3890   | 3010   | 3230   | 1830  | 1620  | 862    | 1280  | 1460    | 1810  | 1540   |
| 21          | 2900   | 3940    | 3890   | 2950   | 3490   | 1200  | 1360  | 873    | 1330  | 1490    | 2200  | 1510   |
| 22          | 2860   | 3940    | 3890   | 2850   | 3600   | 1210  | 1480  | 875    | 1270  | 1530    | 1760  | 1810   |
| 23          | 2940   | 3940    | 3890   | 3080   | 3660   | 1080  | 1220  | 913    | 1750  | 1530    | 2030  | 1930   |
| 24          | 2820   | 3940    | 3900   | 2470   | 3490   | 1240  | 1400  | 1160   | 1880  | 1530    | 1500  | 1530   |
| 25          | 2950   | 3950    | 3900   | 2460   | 3580   | 1370  | 1570  | 1320   | 2560  | 1260    | 2350  | 1570   |
| 26          | 2620   | 3950    | 3900   | 2580   | 3400   | 1420  | 1130  | 1320   | 1050  | 1260    | 2220  | 1850   |
| 27          | 3070   | 3950    | 3900   | 2810   | 3130   | 1230  | 1580  | 1460   | 973   | 1260    | 2200  | 1610   |
| 28          | 2930   | 3950    | 3400   | 2630   | 3070   | 1250  | 998   | 1330   | 1370  | 1260    | 2370  | 1810   |
| 29          | 2650   | 3950    | 3150   | 3030   | ---    | 1130  | 1260  | 1220   | 1470  | 1260    | 1770  | 1580   |
| 30          | 2960   | 3940    | 3900   | 2820   | ---    | 1370  | 1140  | 809    | 1860  | 1260    | 1680  | 1900   |
| 31          | 3060   | ---     | 3900   | 2730   | ---    | 1610  | ---   | 772    | ---   | 1250    | 2060  | ---    |
| TOTAL       | 80150  | 108960  | 112200 | 99140  | 90030  | 39830 | 40488 | 50684  | 40673 | 51790   | 45460 | 50730  |
| MEAN        | 2585   | 3632    | 3619   | 3198   | 3215   | 1285  | 1350  | 1635   | 1356  | 1671    | 1466  | 1691   |
| MAX         | 3100   | 3950    | 3900   | 4030   | 3780   | 2280  | 1760  | 3870   | 2560  | 2200    | 2370  | 2450   |
| MIN         | 1770   | 1740    | 1200   | 2460   | 2890   | 850   | 998   | 772    | 973   | 1250    | 742   | 1240   |
| AC-FT       | 159000 | 216100  | 222500 | 196600 | 178600 | 79000 | 80310 | 100500 | 80670 | 102700  | 90170 | 100600 |
| CAL YR 1986 | TOTAL  | 1393040 | MEAN   | 3817   | MAX    | 7830  | MIN   | 896    | AC-FT | 2763000 |       |        |
| WTR YR 1987 | TOTAL  | 810135  | MEAN   | 2220   | MAX    | 4030  | MIN   | 742    | AC-FT | 1607000 |       |        |

09234500 GREEN RIVER NEAR GREENDALE, UT--Continued

## WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1956 to September 1959, October 1963 to current year.

WATER TEMPERATURES: October 1956 to September 1959, October 1963 to current year.

SEDIMENT DATA: October 1956 to September 1959.

INSTRUMENTATION.--Specific conductance recorder December 1986 to September 1987; temperature recorder December 1986 to September 1987.

REMARKS.--Storage in Flaming Gorge Reservoir began on Nov. 1, 1962. Samples for daily records are taken inside Penstock. Extremes are given for two separate periods--water years 1957-62, and water years 1964 to current year. Extremes for the 1963 water year (October 1962 to September 1963) are not included. Unpublished daily records of specific conductance obtained before 1965 were included in the determination of extremes for period of daily record and are available in files of Utah district office. Daily records provided by Bureau of Reclamation.

EXTREMES FOR PERIOD OF DAILY RECORD (water years 1957-62, 1964 to current year).--

SPECIFIC CONDUCTANCE (water years 1957-58, 1960-62): Maximum daily, 1,340 microsiemens, Aug. 30, 1961; minimum daily, 325 microsiemens, June 2, 1961.

WATER TEMPERATURES (water years 1957-59): Maximum, 24.0°C, July 24, 25, 1959; minimum, 0.0°C on many days during winter period each year.

SPECIFIC CONDUCTANCE (water years 1964 to current year): Maximum daily, 1,060 microsiemens, Nov. 9, 1971;

minimum recorded, 550 microsiemens, June 25, July 4.

WATER TEMPERATURES (water years 1964 to current year): Maximum observed, 15.0°C, Aug. 17, 1987; minimum recorded 1.6°C, Mar. 1, 2, 1987.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum observed, 720 microsiemens, Oct. 1, 6, 8-10; minimum recorded, 550 microsiemens, June 25, July 4.

WATER TEMPERATURES: Maximum observed, 15.0°C, Aug. 17; minimum recorded, 1.6°C, Mar. 1, 2.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-FLOW,<br>INSTANTANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>AIR<br>(DEG C) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | HARD-<br>NESS<br>(MG/L<br>AS<br>CAC03) | HARD-<br>NESS<br>NONCAR-<br>BONATE<br>(MG/L<br>AS<br>CAC03) | HARD-<br>NESS<br>NONCARB<br>WH WAT<br>TOT FLD<br>MG/L AS<br>CAC03 |
|--------------|------|----------------------------------------|---------------------------------------------------|--------------------------------|------------------------------------|--------------------------------------|-------------------------------------|------------------------------------------------------|----------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------|
| NOV<br>05... | 1200 | 946                                    | 680                                               | 8.4                            | 11.5                               | 12.5                                 | 11.1                                | 620                                                  | 240                                    | 87                                                          | 87                                                                |
| JAN<br>21... | 1255 | 3640                                   | 620                                               | 8.4                            | 5.5                                | 4.0                                  | 7.3                                 | 621                                                  | 240                                    | 83                                                          | 83                                                                |
| MAR<br>26... | 1210 | 1380                                   | 640                                               | 8.1                            | 16.0                               | 6.5                                  | 12.3                                | 694                                                  | 240                                    | 82                                                          | 82                                                                |
| MAY<br>27... | 1145 | 1250                                   | 600                                               | 8.2                            | 14.5                               | 8.5                                  | 9.8                                 | 613                                                  | 230                                    | 81                                                          | 81                                                                |
| JUL<br>29... | 1715 | 1300                                   | 590                                               | 8.1                            | 27.5                               | 13.5                                 | 7.8                                 | 618                                                  | 220                                    | 82                                                          | 82                                                                |

| DATE         | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | PERCENT<br>SODIUM | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CAC03) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) |
|--------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|
| NOV<br>05... | 58                                           | 23                                                   | 50                                           | 31                | 1                                       | 2.4                                                 | 153                                             | 170                                           | 17                                                  | 0.3                                                |
| JAN<br>21... | 59                                           | 22                                                   | 47                                           | 30                | 1                                       | 2.6                                                 | 155                                             | 170                                           | 17                                                  | 0.3                                                |
| MAR<br>26... | 59                                           | 22                                                   | 48                                           | 30                | 1                                       | 2.5                                                 | 156                                             | 170                                           | 19                                                  | 0.2                                                |
| MAY<br>27... | 56                                           | 21                                                   | 44                                           | 29                | 1                                       | 2.2                                                 | 145                                             | 170                                           | 16                                                  | 0.2                                                |
| JUL<br>29... | 55                                           | 21                                                   | 43                                           | 29                | 1                                       | 2.3                                                 | 142                                             | 140                                           | 13                                                  | 0.2                                                |





## GREEN RIVER BASIN

09234500 GREEN RIVER NEAR GREENDALE, UT--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY   | MAX      | MIN | MEAN | MAX   | MIN | MEAN | MAX    | MIN | MEAN | MAX       | MIN | MEAN |
|-------|----------|-----|------|-------|-----|------|--------|-----|------|-----------|-----|------|
|       | FEBRUARY |     |      | MARCH |     |      | APRIL  |     |      | MAY       |     |      |
| 1     | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 635       | 608 | 621  |
| 2     | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 629       | 581 | 605  |
| 3     | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 618       | 587 | 610  |
| 4     | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 623       | 612 | 617  |
| 5     | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 630       | 607 | 616  |
| 6     | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 630       | 610 | 619  |
| 7     | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 642       | 615 | 629  |
| 8     | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 637       | 601 | 627  |
| 9     | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 635       | 593 | 619  |
| 10    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 625       | 608 | 620  |
| 11    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 632       | 613 | 620  |
| 12    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 625       | 614 | 621  |
| 13    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 630       | 601 | 619  |
| 14    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 622       | 605 | 615  |
| 15    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 622       | 604 | 611  |
| 16    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 626       | 595 | 612  |
| 17    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 627       | 605 | 617  |
| 18    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 624       | 594 | 611  |
| 19    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 628       | 603 | 614  |
| 20    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 628       | 602 | 619  |
| 21    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 631       | 607 | 620  |
| 22    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 629       | 605 | 620  |
| 23    | ---      | --- | ---  | ---   | --- | ---  | 645    | 630 | 639  | 631       | 614 | 622  |
| 24    | ---      | --- | ---  | ---   | --- | ---  | 641    | 631 | 637  | 626       | 605 | 615  |
| 25    | ---      | --- | ---  | ---   | --- | ---  | 650    | 628 | 643  | 610       | 590 | 602  |
| 26    | ---      | --- | ---  | ---   | --- | ---  | 643    | 630 | 637  | 615       | 593 | 606  |
| 27    | ---      | --- | ---  | ---   | --- | ---  | 638    | 622 | 630  | 611       | 592 | 598  |
| 28    | ---      | --- | ---  | ---   | --- | ---  | 642    | 596 | 628  | 608       | 593 | 602  |
| 29    | ---      | --- | ---  | ---   | --- | ---  | 644    | 621 | 632  | 601       | 590 | 595  |
| 30    | ---      | --- | ---  | ---   | --- | ---  | 642    | 594 | 623  | 604       | 597 | 600  |
| 31    | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 613       | 578 | 599  |
| MONTH | ---      | --- | ---  | ---   | --- | ---  | ---    | --- | ---  | 642       | 578 | 614  |
|       | JUNE     |     |      | JULY  |     |      | AUGUST |     |      | SEPTEMBER |     |      |
| 1     | 604      | 572 | 585  | 562   | 556 | 558  | 597    | 593 | 595  | 624       | 608 | 613  |
| 2     | 601      | 577 | 589  | 563   | 555 | 558  | 600    | 592 | 596  | 624       | 607 | 613  |
| 3     | 599      | 591 | 595  | 560   | 556 | 558  | 597    | 591 | 594  | 625       | 615 | 619  |
| 4     | 602      | 588 | 596  | 559   | 550 | 556  | 596    | 590 | 593  | 624       | 613 | 617  |
| 5     | 606      | 583 | 596  | 561   | 552 | 556  | 603    | 583 | 592  | 626       | 614 | 620  |
| 6     | 601      | 590 | 594  | 569   | 554 | 562  | 585    | 581 | 584  | 623       | 609 | 616  |
| 7     | 593      | 583 | 589  | 568   | 557 | 563  | 591    | 582 | 586  | 625       | 611 | 618  |
| 8     | 588      | 580 | 583  | 571   | 560 | 563  | 592    | 583 | 588  | 615       | 612 | 613  |
| 9     | 583      | 573 | 577  | 568   | 560 | 563  | 594    | 588 | 591  | 620       | 608 | 614  |
| 10    | 583      | 574 | 578  | 566   | 556 | 562  | 594    | 587 | 590  | 620       | 609 | 613  |
| 11    | 580      | 570 | 575  | 565   | 560 | 563  | 593    | 586 | 589  | 622       | 610 | 615  |
| 12    | 585      | 572 | 577  | 564   | 561 | 563  | 596    | 589 | 593  | 617       | 608 | 613  |
| 13    | 580      | 569 | 575  | 565   | 560 | 563  | 595    | 588 | 592  | 620       | 611 | 615  |
| 14    | 576      | 569 | 572  | 567   | 560 | 564  | 611    | 587 | 596  | 625       | 615 | 619  |
| 15    | 586      | 567 | 576  | 572   | 566 | 568  | 604    | 589 | 596  | 622       | 614 | 617  |
| 16    | 583      | 570 | 578  | 576   | 568 | 571  | 592    | 587 | 590  | 625       | 612 | 618  |
| 17    | 582      | 560 | 573  | 582   | 573 | 578  | 589    | 584 | 587  | 620       | 611 | 615  |
| 18    | 581      | 564 | 573  | 580   | 571 | 576  | 591    | 586 | 588  | 621       | 608 | 614  |
| 19    | 579      | 564 | 571  | 584   | 571 | 578  | 597    | 588 | 591  | 615       | 608 | 611  |
| 20    | 584      | 567 | 577  | 588   | 574 | 583  | 604    | 591 | 596  | 619       | 609 | 614  |
| 21    | 578      | 564 | 570  | 601   | 581 | 590  | 602    | 593 | 598  | 619       | 613 | 615  |
| 22    | 578      | 561 | 570  | 593   | 580 | 587  | 615    | 600 | 605  | 621       | 611 | 616  |
| 23    | 566      | 555 | 560  | 593   | 584 | 588  | 612    | 599 | 604  | 618       | 613 | 616  |
| 24    | 569      | 552 | 560  | 596   | 581 | 589  | 621    | 600 | 609  | 623       | 615 | 619  |
| 25    | 567      | 550 | 558  | 596   | 589 | 593  | 605    | 600 | 603  | 625       | 616 | 619  |
| 26    | 574      | 558 | 564  | 596   | 589 | 592  | 609    | 602 | 606  | 622       | 617 | 619  |
| 27    | 566      | 557 | 563  | 593   | 586 | 590  | 607    | 603 | 605  | 622       | 618 | 620  |
| 28    | 564      | 551 | 558  | 590   | 584 | 587  | 613    | 604 | 606  | 620       | 615 | 618  |
| 29    | 568      | 551 | 561  | 592   | 583 | 586  | 614    | 606 | 611  | 625       | 616 | 619  |
| 30    | 561      | 556 | 559  | 592   | 586 | 589  | 615    | 607 | 611  | 624       | 615 | 619  |
| 31    | ---      | --- | ---  | 592   | 587 | 589  | 614    | 605 | 610  | ---       | --- | ---  |
| MONTH | 606      | 550 | 575  | 601   | 550 | 574  | 621    | 581 | 597  | 626       | 607 | 616  |



09234500 GREEN RIVER NEAR GREENDALE, UT--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY   | MAX      | MIN | MEAN | MAX      | MIN | MEAN | MAX      | MIN | MEAN | MAX     | MIN | MEAN |
|-------|----------|-----|------|----------|-----|------|----------|-----|------|---------|-----|------|
|       | OCTOBER  |     |      | NOVEMBER |     |      | DECEMBER |     |      | JANUARY |     |      |
| 1     | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 6.2     | 6.1 | 6.2  |
| 2     | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 6.1     | 6.0 | 6.1  |
| 3     | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 6.0     | 5.9 | 6.0  |
| 4     | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 6.0     | 5.9 | 6.0  |
| 5     | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 5.9     | 5.9 | 5.9  |
| 6     | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 6.0     | 5.9 | 6.0  |
| 7     | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 5.9     | 5.8 | 5.9  |
| 8     | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 5.8     | 5.7 | 5.8  |
| 9     | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 5.7     | 5.6 | 5.7  |
| 10    | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 5.6     | 5.5 | 5.6  |
| 11    | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 5.6     | 5.5 | 5.5  |
| 12    | ---      | --- | ---  | ---      | --- | ---  | 7.3      | 7.2 | 7.3  | 5.5     | 5.4 | 5.5  |
| 13    | ---      | --- | ---  | ---      | --- | ---  | 7.2      | 7.1 | 7.2  | 5.5     | 5.3 | 5.4  |
| 14    | ---      | --- | ---  | ---      | --- | ---  | 7.2      | 7.0 | 7.1  | 5.4     | 5.1 | 5.3  |
| 15    | ---      | --- | ---  | ---      | --- | ---  | 7.1      | 7.0 | 7.0  | 5.3     | 5.2 | 5.3  |
| 16    | ---      | --- | ---  | ---      | --- | ---  | 7.1      | 6.9 | 7.0  | 5.3     | 5.1 | 5.2  |
| 17    | ---      | --- | ---  | ---      | --- | ---  | 7.0      | 7.0 | 7.0  | 5.2     | 5.0 | 5.1  |
| 18    | ---      | --- | ---  | ---      | --- | ---  | 7.0      | 6.9 | 6.9  | 5.0     | 4.8 | 4.9  |
| 19    | ---      | --- | ---  | ---      | --- | ---  | 6.9      | 6.8 | 6.9  | 4.8     | 4.5 | 4.7  |
| 20    | ---      | --- | ---  | ---      | --- | ---  | 6.8      | 6.8 | 6.8  | 4.6     | 4.4 | 4.5  |
| 21    | ---      | --- | ---  | ---      | --- | ---  | 6.8      | 6.7 | 6.8  | 4.4     | 4.0 | 4.2  |
| 22    | ---      | --- | ---  | ---      | --- | ---  | 6.7      | 6.6 | 6.7  | 4.2     | 3.9 | 4.1  |
| 23    | ---      | --- | ---  | ---      | --- | ---  | 6.6      | 6.6 | 6.6  | 4.2     | 4.0 | 4.1  |
| 24    | ---      | --- | ---  | ---      | --- | ---  | 6.6      | 6.5 | 6.5  | 4.1     | 3.7 | 3.9  |
| 25    | ---      | --- | ---  | ---      | --- | ---  | 6.5      | 6.4 | 6.5  | 4.0     | 3.6 | 3.8  |
| 26    | ---      | --- | ---  | ---      | --- | ---  | 6.5      | 6.4 | 6.4  | 3.8     | 3.6 | 3.8  |
| 27    | ---      | --- | ---  | ---      | --- | ---  | 6.5      | 6.4 | 6.5  | 3.9     | 3.6 | 3.8  |
| 28    | ---      | --- | ---  | ---      | --- | ---  | 6.5      | 6.4 | 6.4  | 4.2     | 3.4 | 3.8  |
| 29    | ---      | --- | ---  | ---      | --- | ---  | 6.4      | 6.3 | 6.4  | 3.6     | 3.4 | 3.6  |
| 30    | ---      | --- | ---  | ---      | --- | ---  | 6.3      | 6.2 | 6.3  | 3.7     | 3.4 | 3.6  |
| 31    | ---      | --- | ---  | ---      | --- | ---  | 6.2      | 6.1 | 6.2  | 3.6     | 3.4 | 3.6  |
| MONTH | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 6.2     | 3.4 | 4.93 |
|       | FEBRUARY |     |      | MARCH    |     |      | APRIL    |     |      | MAY     |     |      |
| 1     | 3.6      | 3.4 | 3.5  | 3.0      | 1.6 | 2.5  | ---      | --- | ---  | 7.4     | 6.2 | 6.8  |
| 2     | 3.7      | 3.4 | 3.6  | ---      | 1.6 | ---  | ---      | --- | ---  | 9.0     | 6.7 | 7.9  |
| 3     | 3.5      | 3.3 | 3.5  | 3.2      | 2.5 | 2.7  | ---      | --- | ---  | 8.2     | 7.7 | 8.0  |
| 4     | 3.4      | 3.1 | 3.2  | 3.1      | 2.5 | 2.8  | ---      | --- | ---  | 7.9     | 7.3 | 7.5  |
| 5     | 3.3      | 3.1 | 3.2  | 3.2      | 2.8 | 3.0  | ---      | --- | ---  | 7.4     | 6.6 | 7.1  |
| 6     | 3.4      | 3.2 | 3.3  | 3.1      | 2.8 | 2.9  | ---      | --- | ---  | 7.1     | 6.5 | 6.9  |
| 7     | 3.3      | 3.1 | 3.3  | 3.6      | 2.6 | 2.9  | ---      | --- | ---  | 7.4     | 6.1 | 6.8  |
| 8     | 3.3      | 3.1 | 3.2  | 3.1      | 2.7 | 2.8  | ---      | --- | ---  | 7.6     | 6.4 | 6.9  |
| 9     | 3.2      | 3.1 | 3.1  | 2.8      | 2.6 | 2.8  | ---      | --- | ---  | 8.9     | 6.4 | 7.3  |
| 10    | 3.3      | 3.0 | 3.2  | 3.4      | 2.6 | 2.8  | ---      | --- | ---  | 8.5     | 7.2 | 7.5  |
| 11    | 3.3      | 3.1 | 3.2  | 3.1      | 2.5 | 2.7  | ---      | --- | ---  | 7.9     | 6.9 | 7.5  |
| 12    | 3.3      | 3.1 | 3.2  | 3.3      | 2.5 | 2.8  | ---      | --- | ---  | 8.3     | 7.1 | 7.5  |
| 13    | 3.4      | 3.1 | 3.3  | 3.4      | 2.7 | 2.9  | ---      | --- | ---  | 8.1     | 7.0 | 7.4  |
| 14    | 3.3      | 2.8 | 2.9  | 3.3      | 2.5 | 2.8  | ---      | --- | ---  | 8.0     | 6.9 | 7.4  |
| 15    | 3.0      | 2.8 | 2.9  | 3.1      | 2.6 | 2.9  | ---      | --- | ---  | 7.5     | 6.9 | 7.3  |
| 16    | 3.0      | 2.9 | 3.0  | 3.0      | 2.7 | 2.9  | ---      | --- | ---  | 8.2     | 6.8 | 7.4  |
| 17    | 3.1      | 2.8 | 2.9  | 2.8      | 2.5 | 2.7  | ---      | --- | ---  | 7.8     | 6.6 | 7.2  |
| 18    | 2.9      | 2.8 | 2.9  | 3.1      | 2.5 | 2.8  | ---      | --- | ---  | 9.3     | 6.9 | 7.8  |
| 19    | 2.9      | 2.7 | 2.8  | 2.6      | 2.4 | 2.5  | ---      | --- | ---  | 9.0     | 6.9 | 7.9  |
| 20    | 2.8      | 2.7 | 2.7  | ---      | --- | ---  | ---      | --- | ---  | 8.9     | 6.7 | 7.5  |
| 21    | 2.8      | 1.8 | 2.7  | ---      | --- | ---  | ---      | --- | ---  | 8.0     | 6.6 | 7.2  |
| 22    | 2.9      | 2.6 | 2.8  | ---      | --- | ---  | ---      | --- | ---  | 8.4     | 6.6 | 7.4  |
| 23    | 3.1      | 2.8 | 3.0  | ---      | --- | ---  | 6.6      | 5.8 | 6.1  | 7.5     | 6.7 | 7.2  |
| 24    | 3.3      | 3.0 | 3.2  | ---      | --- | ---  | 6.6      | 5.9 | 6.3  | 7.8     | 6.8 | 7.3  |
| 25    | 3.3      | 3.0 | 3.2  | ---      | --- | ---  | 6.7      | 6.0 | 6.2  | 8.4     | 7.2 | 7.9  |
| 26    | 2.9      | 2.6 | 2.8  | ---      | --- | ---  | 6.6      | 6.0 | 6.2  | 8.4     | 7.2 | 7.6  |
| 27    | 2.6      | 2.3 | 2.5  | ---      | --- | ---  | 6.5      | 6.0 | 6.2  | 8.7     | 7.3 | 8.2  |
| 28    | 2.6      | 1.7 | 2.3  | ---      | --- | ---  | 7.8      | 6.0 | 6.6  | 8.6     | 7.7 | 8.1  |
| 29    | ---      | --- | ---  | ---      | --- | ---  | 6.8      | 6.2 | 6.6  | 8.5     | 8.0 | 8.3  |
| 30    | ---      | --- | ---  | ---      | --- | ---  | 7.5      | 6.2 | 6.8  | 8.6     | 7.8 | 8.1  |
| 31    | ---      | --- | ---  | ---      | --- | ---  | ---      | --- | ---  | 9.2     | 7.6 | 8.3  |
| MONTH | 3.7      | 1.7 | 3.05 | ---      | --- | ---  | ---      | --- | ---  | 9.3     | 6.1 | 7.52 |



09234500 GREEN RIVER NEAR GREENDALE, UT--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY   | MAX  | MIN  | MEAN | MAX  | MIN  | MEAN | MAX    | MIN  | MEAN | MAX       | MIN  | MEAN |
|-------|------|------|------|------|------|------|--------|------|------|-----------|------|------|
|       | JUNE |      |      | JULY |      |      | AUGUST |      |      | SEPTEMBER |      |      |
| 1     | 10.5 | 8.5  | 9.8  | 12.4 | 11.8 | 12.1 | 12.7   | 12.0 | 12.4 | 14.1      | 12.2 | 13.4 |
| 2     | 10.6 | 9.1  | 9.9  | 12.6 | 12.0 | 12.3 | 12.6   | 12.0 | 12.4 | 13.8      | 12.1 | 13.4 |
| 3     | 10.0 | 9.1  | 9.4  | 13.1 | 12.1 | 12.5 | 13.2   | 12.1 | 12.6 | 13.4      | 11.9 | 12.7 |
| 4     | 9.6  | 8.9  | 9.2  | 13.6 | 12.4 | 12.9 | 13.3   | 12.2 | 12.8 | 13.4      | 11.8 | 12.8 |
| 5     | 10.1 | 8.2  | 9.1  | 13.3 | 12.7 | 13.0 | 14.0   | 11.9 | 12.9 | 12.8      | 11.7 | 12.3 |
| 6     | 10.0 | 8.7  | 9.3  | 13.0 | 12.0 | 12.6 | 14.4   | 13.6 | 14.0 | 13.6      | 12.1 | 12.9 |
| 7     | 10.0 | 9.1  | 9.5  | 12.6 | 11.9 | 12.3 | 14.0   | 13.2 | 13.7 | 14.0      | 12.2 | 13.2 |
| 8     | 10.5 | 9.4  | 9.9  | 13.1 | 12.2 | 12.5 | 14.3   | 13.3 | 13.8 | 13.6      | 13.1 | 13.5 |
| 9     | 10.5 | 9.8  | 10.2 | 13.0 | 12.1 | 12.6 | 14.0   | 13.2 | 13.5 | 14.1      | 12.7 | 13.4 |
| 10    | 10.5 | 9.6  | 10.0 | 13.2 | 12.6 | 12.8 | 14.3   | 13.0 | 13.8 | 13.8      | 12.6 | 13.4 |
| 11    | 10.4 | 9.7  | 10.1 | 13.2 | 12.4 | 12.8 | 14.3   | 13.5 | 13.9 | 14.0      | 12.3 | 13.3 |
| 12    | 10.6 | 9.4  | 10.0 | 13.2 | 12.3 | 12.9 | 14.0   | 13.2 | 13.5 | 14.1      | 13.1 | 13.7 |
| 13    | 10.6 | 9.5  | 10.0 | 13.4 | 12.7 | 13.1 | 14.3   | 13.3 | 13.8 | 14.3      | 13.0 | 13.6 |
| 14    | 10.5 | 9.6  | 10.1 | 13.4 | 12.8 | 13.2 | 14.9   | 12.1 | 13.6 | 13.8      | 12.5 | 13.2 |
| 15    | 10.3 | 9.3  | 9.9  | 13.2 | 12.4 | 12.8 | 14.0   | 12.9 | 13.5 | 13.5      | 12.7 | 13.2 |
| 16    | 10.1 | 9.3  | 9.7  | 12.9 | 12.3 | 12.6 | 14.0   | 13.4 | 13.8 | 13.6      | 12.1 | 12.9 |
| 17    | 10.7 | 9.1  | 9.8  | 12.5 | 11.5 | 12.2 | 14.8   | 13.8 | 14.2 | 13.5      | 12.2 | 13.0 |
| 18    | 10.4 | 9.2  | 9.8  | 12.9 | 11.9 | 12.4 | 14.6   | 14.1 | 14.3 | 14.1      | 12.5 | 13.4 |
| 19    | 10.8 | 9.4  | 10.1 | 12.8 | 11.8 | 12.4 | 14.5   | 13.8 | 14.3 | 14.4      | 13.4 | 14.0 |
| 20    | 10.2 | 9.1  | 9.5  | 12.1 | 10.8 | 11.7 | 14.6   | 12.9 | 14.0 | 14.3      | 13.3 | 13.8 |
| 21    | 10.4 | 9.4  | 9.9  | 11.5 | 9.7  | 10.7 | 14.2   | 13.8 | 14.1 | 13.9      | 13.1 | 13.7 |
| 22    | 11.8 | 9.3  | 10.6 | 11.8 | 11.0 | 11.3 | 14.0   | 12.3 | 13.4 | 13.9      | 12.8 | 13.5 |
| 23    | 12.1 | 10.8 | 11.5 | 11.5 | 11.0 | 11.3 | 13.7   | 12.4 | 13.4 | 13.8      | 13.3 | 13.5 |
| 24    | 12.4 | 10.3 | 11.6 | 11.6 | 10.3 | 11.2 | 13.9   | 11.8 | 13.0 | 13.7      | 12.6 | 13.2 |
| 25    | 12.7 | 10.7 | 11.9 | 11.7 | 10.4 | 11.0 | 14.0   | 13.4 | 13.8 | 13.4      | 12.6 | 13.1 |
| 26    | 11.9 | 10.3 | 11.3 | 11.8 | 10.7 | 11.4 | 13.7   | 13.3 | 13.5 | 13.2      | 12.6 | 13.0 |
| 27    | 11.9 | 11.0 | 11.5 | 12.2 | 11.5 | 11.8 | 14.0   | 13.2 | 13.7 | 12.9      | 12.6 | 12.8 |
| 28    | 13.6 | 11.3 | 12.3 | 12.5 | 11.7 | 12.1 | 13.9   | 13.1 | 13.7 | 13.3      | 12.5 | 12.9 |
| 29    | 13.4 | 11.3 | 12.0 | 12.7 | 12.2 | 12.4 | 14.2   | 12.9 | 13.6 | 13.2      | 12.1 | 12.8 |
| 30    | 12.4 | 11.9 | 12.2 | 13.1 | 12.2 | 12.7 | 14.2   | 13.1 | 13.7 | 13.3      | 12.4 | 13.0 |
| 31    | ---  | ---  | ---  | 13.2 | 12.6 | 12.9 | 14.4   | 13.3 | 13.8 | ---       | ---  | ---  |
| MONTH | 13.6 | 8.2  | 10.3 | 13.6 | 9.7  | 12.3 | 14.9   | 11.8 | 13.6 | 14.4      | 11.7 | 13.2 |

## 09253000 LITTLE SNAKE RIVER NEAR SLATER, CO

LOCATION.--Lat 40°59'58", long 107°08'34", in SW1/4 NW1/4 sec.15, T.12 N., R.87 W., Routt County, Hydrologic Unit 14050003, on left bank just downstream from highway bridge at Focus Ranch, 0.2 mi downstream from Spring Creek, and 12 mi east of Slater.

DRAINAGE AREA.--285 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1942 to September 1947, October 1950 to current year.

REVISED RECORDS.--WSP 1733: 1960.

GAGE.--Water-stage recorder. Datum of gage is 6,831.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 24-28, Oct. 31 to Mar. 14, Mar. 23, 26, 28, 30. Records good except for estimated daily discharges, which are poor. Diversions for irrigation of about 2,000 acres upstream from station.

AVERAGE DISCHARGE.--42 years, 237 ft<sup>3</sup>/s; 171,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,780 ft<sup>3</sup>/s, May 23, 1984, gage height, 8.78 ft; maximum gage height, 8.95 ft, Apr. 25, 1974; minimum daily discharge, 8.6 ft<sup>3</sup>/s, Sept. 10, 1944.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft<sup>3</sup>/s, and maximum (\*):

| Date  | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                  | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|-------|------|--------------------------------|------------------|---------------------------------------|------|--------------------------------|------------------|
| May 1 | 2200 | *1,050                         | *5.83            | No peaks greater than base discharge. |      |                                |                  |

Minimum daily, 13 ft<sup>3</sup>/s, Aug. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|------|------|------|------|------|-------|-------|-------|------|------|------|
| 1     | 68   | 65   | 45   | 40   | 30   | 35   | 53    | 855   | 335   | 105  | 50   | 18   |
| 2     | 85   | 60   | 45   | 40   | 35   | 40   | 59    | 831   | 317   | 67   | 32   | 16   |
| 3     | 120  | 50   | 45   | 40   | 35   | 45   | 67    | 637   | 302   | 54   | 25   | 16   |
| 4     | 103  | 50   | 45   | 40   | 35   | 50   | 85    | 561   | 293   | 52   | 20   | 20   |
| 5     | 80   | 55   | 50   | 40   | 30   | 55   | 108   | 596   | 282   | 54   | 18   | 26   |
| 6     | 78   | 50   | 55   | 40   | 30   | 55   | 144   | 633   | 270   | 45   | 18   | 23   |
| 7     | 86   | 45   | 50   | 35   | 35   | 60   | 149   | 655   | 259   | 41   | 21   | 19   |
| 8     | 91   | 40   | 45   | 35   | 35   | 65   | 164   | 659   | 269   | 39   | 31   | 18   |
| 9     | 84   | 45   | 40   | 30   | 35   | 65   | 148   | 666   | 316   | 40   | 26   | 19   |
| 10    | 84   | 50   | 30   | 35   | 35   | 60   | 131   | 693   | 302   | 38   | 19   | 18   |
| 11    | 83   | 50   | 35   | 35   | 35   | 60   | 130   | 702   | 243   | 47   | 18   | 17   |
| 12    | 62   | 55   | 35   | 40   | 35   | 65   | 120   | 754   | 210   | 92   | 20   | 17   |
| 13    | 68   | 60   | 35   | 40   | 40   | 65   | 93    | 737   | 186   | 74   | 19   | 17   |
| 14    | 63   | 60   | 35   | 35   | 35   | 70   | 107   | 722   | 167   | 48   | 19   | 16   |
| 15    | 62   | 65   | 35   | 35   | 35   | 72   | 179   | 724   | 152   | 39   | 23   | 18   |
| 16    | 60   | 60   | 35   | 30   | 35   | 64   | 272   | 759   | 140   | 35   | 42   | 18   |
| 17    | 60   | 60   | 35   | 30   | 35   | 59   | 360   | 744   | 127   | 33   | 31   | 19   |
| 18    | 61   | 55   | 40   | 30   | 35   | 56   | 487   | 719   | 126   | 38   | 21   | 19   |
| 19    | 61   | 50   | 40   | 25   | 30   | 58   | 492   | 671   | 121   | 32   | 16   | 18   |
| 20    | 67   | 50   | 40   | 25   | 30   | 56   | 378   | 594   | 112   | 29   | 13   | 17   |
| 21    | 77   | 55   | 40   | 25   | 30   | 61   | 299   | 589   | 107   | 28   | 17   | 16   |
| 22    | 91   | 55   | 40   | 30   | 30   | 60   | 374   | 517   | 97    | 29   | 40   | 16   |
| 23    | 80   | 50   | 40   | 30   | 35   | 50   | 522   | 516   | 90    | 28   | 33   | 16   |
| 24    | 75   | 55   | 40   | 35   | 35   | 53   | 632   | 470   | 85    | 23   | 48   | 15   |
| 25    | 70   | 50   | 40   | 35   | 35   | 53   | 666   | 485   | 77    | 22   | 47   | 15   |
| 26    | 70   | 50   | 40   | 35   | 35   | 65   | 664   | 443   | 71    | 29   | 45   | 16   |
| 27    | 70   | 45   | 40   | 30   | 35   | 47   | 694   | 421   | 66    | 30   | 32   | 17   |
| 28    | 70   | 45   | 35   | 30   | 35   | 45   | 771   | 413   | 63    | 27   | 30   | 16   |
| 29    | 70   | 45   | 35   | 30   | ---  | 45   | 794   | 408   | 64    | 38   | 30   | 16   |
| 30    | 70   | 40   | 45   | 30   | ---  | 45   | 766   | 432   | 80    | 34   | 26   | 18   |
| 31    | 60   | ---  | 40   | 30   | ---  | 47   | ---   | 347   | ---   | 54   | 21   | ---  |
| TOTAL | 2329 | 1565 | 1250 | 1040 | 950  | 1726 | 9903  | 18953 | 5329  | 1344 | 851  | 530  |
| MEAN  | 75.1 | 52.2 | 40.3 | 33.5 | 33.9 | 55.7 | 330   | 611   | 178   | 43.4 | 27.5 | 17.7 |
| MAX   | 120  | 65   | 55   | 40   | 40   | 72   | 794   | 855   | 335   | 105  | 50   | 26   |
| MIN   | 60   | 40   | 30   | 25   | 30   | 35   | 53    | 347   | 63    | 22   | 13   | 15   |
| AC-FT | 4620 | 3100 | 2480 | 2060 | 1880 | 3420 | 19650 | 37590 | 10570 | 2670 | 1690 | 1050 |

CAL YR 1986 TOTAL 108330 MEAN 297 MAX 2030 MIN 26 AC-FT 214900  
WTR YR 1987 TOTAL 45775 MEAN 125 MAX 855 MIN 13 AC-FT 90790

## 09253400 BATTLE CREEK NEAR ENCAMPMENT, WY

LOCATION.--Lat 41°07'54", long 107°04'06", in NE1/4 NE1/4 NW1/4 sec.4, T.13 N., R.86 W., Carbon County, Hydrologic Unit 14050003, Medicine Bow National Forest, on right bank 25 ft upstream from foot bridge, 0.8 mi southeast of Lost Creek Campground, 1.2 mi downstream from Haskins Creek, 1.6 mi upstream from Baby Lake Creek, and 15 mi west of Encampment.

DRAINAGE AREA.--13.0 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1956 to September 1963, April 1985 to current year.

REVISED RECORDS: WDR WY-85-1: Drainage area. WDR WY-86-1: 1985(P).

GAGE.--Water-stage recorder. Elevation of gage is 8,380 ft above National Geodetic Vertical Datum of 1929, from topographic map. April 1956 to September 1963, at site 10 ft upstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 12-16, 31, Nov. 1-15, Apr. 15-19, 21, and June 11 to July 6. Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

AVERAGE DISCHARGE.--9 years (water years 1957-63, 1986-87), 27.6 ft<sup>3</sup>/s, 20,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 670 ft<sup>3</sup>/s, May 29, 1958, gage height, 4.18 ft, site and datum then in use, from rating curve extended above 320 ft<sup>3</sup>/s; minimum daily discharge, 1.7 ft<sup>3</sup>/s, Nov. 15, 1958, but may have been less during periods of ice effect.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft<sup>3</sup>/s and maximum (\*):

| Date                                                                          | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|-------------------------------------------------------------------------------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| May 16                                                                        | 1900 | *214                           | *2.98            | No other peak greater than base discharge. |      |                                |                  |
| Minimum daily discharge, 4.0 ft <sup>3</sup> /s, Mar. 27-29, Sept. 25-28, 30. |      |                                |                  |                                            |      |                                |                  |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN  | JUL   | AUG   | SEP   |
|-------------|-------|---------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| 1           | 9.1   | 8.4     | 6.9   | 5.9   | 4.7   | 4.2   | 4.3   | 70   | 59   | 18    | 7.7   | 5.2   |
| 2           | 11    | 7.8     | 6.8   | 6.0   | 4.7   | 4.2   | 4.4   | 63   | 59   | 16    | 6.9   | 5.1   |
| 3           | 11    | 8.2     | 7.2   | 6.0   | 4.7   | 4.2   | 4.5   | 54   | 59   | 15    | 6.7   | 5.1   |
| 4           | 10    | 8.6     | 7.3   | 6.0   | 4.7   | 4.3   | 4.9   | 54   | 59   | 14    | 6.4   | 5.9   |
| 5           | 9.7   | 9.4     | 7.2   | 5.9   | 4.6   | 4.3   | 4.5   | 61   | 60   | 13    | 6.3   | 5.6   |
| 6           | 11    | 9.7     | 7.2   | 5.8   | 4.6   | 4.6   | 4.9   | 72   | 59   | 12    | 6.8   | 5.3   |
| 7           | 12    | 8.7     | 7.2   | 6.2   | 4.7   | 4.9   | 5.6   | 85   | 58   | 12    | 6.9   | 5.1   |
| 8           | 12    | 7.9     | 7.2   | 5.9   | 4.6   | 4.9   | 6.1   | 96   | 61   | 12    | 7.5   | 4.9   |
| 9           | 13    | 7.0     | 6.8   | 5.7   | 4.6   | 4.7   | 6.3   | 108  | 65   | 11    | 6.4   | 4.8   |
| 10          | 13    | 6.0     | 6.8   | 5.5   | 4.6   | 4.6   | 6.0   | 122  | 57   | 11    | 6.0   | 4.7   |
| 11          | 12    | 6.5     | 7.2   | 5.6   | 4.6   | 4.5   | 5.8   | 133  | 52   | 12    | 5.9   | 4.7   |
| 12          | 10    | 6.5     | 7.3   | 5.5   | 4.6   | 4.4   | 5.6   | 163  | 49   | 14    | 5.9   | 4.7   |
| 13          | 11    | 6.9     | 7.3   | 5.4   | 4.6   | 4.5   | 5.5   | 160  | 45   | 12    | 5.8   | 4.7   |
| 14          | 11    | 7.2     | 7.0   | 5.4   | 4.6   | 4.5   | 5.6   | 158  | 41   | 11    | 5.8   | 5.0   |
| 15          | 10    | 7.5     | 7.0   | 5.3   | 4.6   | 4.5   | 6.5   | 161  | 39   | 10    | 6.3   | 5.3   |
| 16          | 10    | 7.7     | 7.0   | 5.3   | 4.6   | 4.4   | 12    | 187  | 36   | 9.9   | 7.2   | 4.8   |
| 17          | 10    | 7.7     | 6.7   | 5.1   | 4.6   | 4.4   | 19    | 183  | 33   | 11    | 5.8   | 4.7   |
| 18          | 10    | 7.8     | 6.6   | 5.1   | 4.5   | 4.4   | 27    | 179  | 30   | 10    | 5.7   | 4.6   |
| 19          | 11    | 8.7     | 6.5   | 4.9   | 4.4   | 4.4   | 25    | 161  | 28   | 9.4   | 5.5   | 4.6   |
| 20          | 11    | 8.0     | 6.5   | 4.9   | 4.4   | 4.4   | 16    | 145  | 26   | 9.1   | 5.4   | 4.5   |
| 21          | 10    | 7.9     | 6.5   | 4.9   | 4.3   | 4.3   | 15    | 123  | 25   | 9.1   | 5.4   | 4.5   |
| 22          | 9.9   | 7.8     | 6.1   | 4.9   | 4.4   | 4.2   | 17    | 103  | 23   | 8.4   | 6.1   | 4.4   |
| 23          | 10    | 7.6     | 6.2   | 4.9   | 4.4   | 4.1   | 23    | 95   | 22   | 7.9   | 6.9   | 4.2   |
| 24          | 9.9   | 7.6     | 6.2   | 4.7   | 4.4   | 4.2   | 30    | 86   | 21   | 7.5   | 8.1   | 4.1   |
| 25          | 9.9   | 7.7     | 6.0   | 4.6   | 4.4   | 4.2   | 35    | 82   | 19   | 7.4   | 7.7   | 4.0   |
| 26          | 10    | 7.6     | 6.1   | 4.9   | 4.4   | 4.1   | 37    | 76   | 18   | 7.7   | 6.7   | 4.0   |
| 27          | 9.4   | 7.3     | 6.2   | 4.7   | 4.2   | 4.0   | 40    | 71   | 18   | 7.4   | 6.1   | 4.0   |
| 28          | 9.4   | 7.2     | 6.2   | 4.6   | 4.2   | 4.0   | 51    | 65   | 16   | 7.0   | 5.9   | 4.0   |
| 29          | 9.2   | 7.2     | 6.1   | 4.8   | ---   | 4.0   | 57    | 61   | 17   | 7.2   | 5.8   | 4.1   |
| 30          | 9.1   | 7.1     | 6.0   | 4.8   | ---   | 4.1   | 61    | 59   | 17   | 7.3   | 5.5   | 4.0   |
| 31          | 9.0   | ---     | 6.0   | 4.9   | ---   | 4.2   | ---   | 58   | ---  | 9.9   | 5.4   | ---   |
| TOTAL       | 323.6 | 231.2   | 207.3 | 164.1 | 126.7 | 134.7 | 545.5 | 3294 | 1171 | 329.2 | 196.5 | 140.6 |
| MEAN        | 10.4  | 7.71    | 6.69  | 5.29  | 4.52  | 4.35  | 18.2  | 106  | 39.0 | 10.6  | 6.34  | 4.69  |
| MAX         | 13    | 9.7     | 7.3   | 6.2   | 4.7   | 4.9   | 61    | 187  | 65   | 18    | 8.1   | 5.9   |
| MIN         | 9.0   | 6.0     | 6.0   | 4.6   | 4.2   | 4.0   | 4.3   | 54   | 16   | 7.0   | 5.4   | 4.0   |
| AC-FT       | 642   | 459     | 411   | 325   | 251   | 267   | 1080  | 6530 | 2320 | 653   | 390   | 279   |
| CAL YR 1986 | TOTAL | 13729.2 |       | MEAN  | 37.6  | MAX   | 387   | MIN  | 4.5  | AC-FT | 27230 |       |
| WTR YR 1987 | TOTAL | 6864.4  |       | MEAN  | 18.8  | MAX   | 187   | MIN  | 4.0  | AC-FT | 13620 |       |

09253400 BATTLE CREEK NEAR ENCAMPMENT, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1986 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April to July 1986, April to June 1987 (discontinued).

SUSPENDED-SEDIMENT DISCHARGE.--April to July 1986, April to June 1987 (discontinued).

INSTRUMENTATION.--Pumping sampler, April to July 1986, April to June 1987.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily mean during period of operation, 58 microsiemens, May 1, 1986; minimum daily mean during period of operation, 28 microsiemens, June 1, 1986.

SEDIMENT CONCENTRATION: Maximum daily mean during period of operation, 97 mg/L, June 3, 1986; minimum daily mean during period of operation, 1 mg/L, June 24, 26, 27, 28, 29, 30, 1986.

SEDIMENT LOAD: Maximum daily mean during period of operation, 83 tons, June 3, 1986; minimum daily mean during period of operation, 0.23 ton, Apr. 22, 1987.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily mean during period of operation, 53 microsiemens, Apr. 22, minimum daily mean during period of operation, 32 microsiemens, May 7.

SEDIMENT CONCENTRATION: Maximum daily mean during period of operation, 26 mg/L, May 5, minimum daily mean during period of operation, 2 mg/L, June 2.

SEDIMENT LOAD: Maximum daily mean during period of operation, 6.6 tons, May 16; minimum daily mean during period of operation, 0.23 ton, Apr. 22.

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     |     |     |     |     |     | --- | 58  | 28  | 40  | --- |     |
| 2   |     |     |     |     |     |     | --- | 55  | 49  | --- | --- |     |
| 3   |     |     |     |     |     |     | --- | 51  | 30  | --- | --- |     |
| 4   |     |     |     |     |     |     | --- | 46  | 34  | --- | --- |     |
| 5   |     |     |     |     |     |     | --- | 43  | 30  | --- | --- |     |
| 6   |     |     |     |     |     |     | --- | 45  | 35  | --- | --- |     |
| 7   |     |     |     |     |     |     | --- | 45  | 31  | --- | --- |     |
| 8   |     |     |     |     |     |     | --- | 47  | 31  | --- | --- |     |
| 9   |     |     |     |     |     |     | --- | 47  | 36  | --- | --- |     |
| 10  |     |     |     |     |     |     | --- | 48  | 32  | --- | --- |     |
| 11  |     |     |     |     |     |     | --- | 57  | 32  | --- | --- |     |
| 12  |     |     |     |     |     |     | --- | 52  | 34  | --- | 56  |     |
| 13  |     |     |     |     |     |     | --- | 46  | 41  | --- | --- |     |
| 14  |     |     |     |     |     |     | --- | 44  | 40  | --- | --- |     |
| 15  |     |     |     |     |     |     | --- | 44  | 38  | --- | --- |     |
| 16  |     |     |     |     |     |     | --- | --- | 36  | --- | --- |     |
| 17  |     |     |     |     |     |     | --- | --- | 41  | --- | --- |     |
| 18  |     |     |     |     |     |     | --- | --- | 31  | --- | --- |     |
| 19  |     |     |     |     |     |     | --- | --- | 32  | --- | --- |     |
| 20  |     |     |     |     |     |     | --- | --- | 33  | --- | --- |     |
| 21  |     |     |     |     |     |     | --- | 36  | 43  | --- | --- |     |
| 22  |     |     |     |     |     |     | --- | 37  | 33  | --- | --- |     |
| 23  |     |     |     |     |     |     | --- | 42  | 35  | --- | --- |     |
| 24  |     |     |     |     |     |     | --- | 50  | 37  | --- | --- |     |
| 25  |     |     |     |     |     |     | --- | 36  | 52  | --- | --- |     |
| 26  |     |     |     |     |     |     | --- | 34  | 37  | --- | --- |     |
| 27  |     |     |     |     |     |     | --- | 33  | 36  | --- | --- |     |
| 28  |     |     |     |     |     |     | --- | 32  | 35  | --- | --- |     |
| 29  |     |     |     |     |     |     | --- | 31  | 36  | --- | --- |     |
| 30  |     |     |     |     |     |     | 57  | 29  | 37  | --- | --- |     |
| 31  |     |     |     |     |     |     | --- | 29  | --- | --- | --- |     |

09253400 BATTLE CREEK NEAR ENCAMPMENT, WY--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     |     |     |     |     |     | --- | --- | 46  |     |     |     |
| 2   |     |     |     |     |     |     | --- | --- | 48  |     |     |     |
| 3   |     |     |     |     |     |     | --- | --- | 52  |     |     |     |
| 4   |     |     |     |     |     |     | --- | --- | 45  |     |     |     |
| 5   |     |     |     |     |     |     | --- | --- | 45  |     |     |     |
| 6   |     |     |     |     |     |     | --- | --- | 45  |     |     |     |
| 7   |     |     |     |     |     |     | --- | 32  | 47  |     |     |     |
| 8   |     |     |     |     |     |     | --- | 36  | 43  |     |     |     |
| 9   |     |     |     |     |     |     | --- | 34  | 42  |     |     |     |
| 10  |     |     |     |     |     |     | --- | 37  | 46  |     |     |     |
| 11  |     |     |     |     |     |     | --- | 37  | --- |     |     |     |
| 12  |     |     |     |     |     |     | --- | 37  | --- |     |     |     |
| 13  |     |     |     |     |     |     | --- | 37  | --- |     |     |     |
| 14  |     |     |     |     |     |     | --- | 33  | --- |     |     |     |
| 15  |     |     |     |     |     |     | --- | 35  | --- |     |     |     |
| 16  |     |     |     |     |     |     | --- | 34  | --- |     |     |     |
| 17  |     |     |     |     |     |     | --- | 34  | --- |     |     |     |
| 18  |     |     |     |     |     |     | --- | 34  | --- |     |     |     |
| 19  |     |     |     |     |     |     | --- | 35  | --- |     |     |     |
| 20  |     |     |     |     |     |     | --- | --- | --- |     |     |     |
| 21  |     |     |     |     |     |     | --- | --- | --- |     |     |     |
| 22  |     |     |     |     |     |     | 53  | --- | --- |     |     |     |
| 23  |     |     |     |     |     |     | 50  | --- | --- |     |     |     |
| 24  |     |     |     |     |     |     | 45  | --- | --- |     |     |     |
| 25  |     |     |     |     |     |     | 45  | --- | --- |     |     |     |
| 26  |     |     |     |     |     |     | 43  | --- | --- |     |     |     |
| 27  |     |     |     |     |     |     | 42  | --- | --- |     |     |     |
| 28  |     |     |     |     |     |     | 41  | 41  | --- |     |     |     |
| 29  |     |     |     |     |     |     | 40  | 42  | --- |     |     |     |
| 30  |     |     |     |     |     |     | --- | 41  | --- |     |     |     |
| 31  |     |     |     |     |     |     | --- | 44  | --- |     |     |     |

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY           | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|---------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| APRIL         |                            |                                      | MAY                                 |                            |                                      | JUNE                                |                            |                                      |                                     |
| 1             | 4.3                        | ---                                  | ---                                 | 70                         | 20                                   | 3.8                                 | 59                         | 3                                    | .48                                 |
| 2             | 4.4                        | ---                                  | ---                                 | 63                         | 20                                   | 3.4                                 | 59                         | 4                                    | .64                                 |
| 3             | 4.6                        | ---                                  | ---                                 | 54                         | 21                                   | 3.1                                 | 59                         | 4                                    | .64                                 |
| 4             | 4.9                        | ---                                  | ---                                 | 54                         | 23                                   | 3.4                                 | 59                         | 3                                    | .48                                 |
| 5             | 4.6                        | ---                                  | ---                                 | 61                         | 26                                   | 4.3                                 | 60                         | 2                                    | .32                                 |
| 6             | 4.9                        | ---                                  | ---                                 | 72                         | 21                                   | 4.1                                 | 59                         | 3                                    | .48                                 |
| 7             | 5.6                        | ---                                  | ---                                 | 85                         | 13                                   | 3.0                                 | 58                         | 3                                    | .47                                 |
| 8             | 6.1                        | ---                                  | ---                                 | 96                         | 6                                    | 1.6                                 | 61                         | 3                                    | .49                                 |
| 9             | 6.3                        | ---                                  | ---                                 | 108                        | 6                                    | 1.7                                 | 65                         | 4                                    | .70                                 |
| 10            | 6.0                        | ---                                  | ---                                 | 122                        | 12                                   | 4.0                                 | 57                         | 3                                    | .46                                 |
| 11            | 5.8                        | ---                                  | ---                                 | 133                        | 10                                   | 3.6                                 | 52                         | ---                                  | ---                                 |
| 12            | 5.6                        | ---                                  | ---                                 | 163                        | 14                                   | 6.2                                 | 49                         | ---                                  | ---                                 |
| 13            | 5.5                        | ---                                  | ---                                 | 160                        | 7                                    | 3.0                                 | 45                         | ---                                  | ---                                 |
| 14            | 5.6                        | ---                                  | ---                                 | 158                        | 6                                    | 2.6                                 | 41                         | ---                                  | ---                                 |
| 15            | 6.5                        | ---                                  | ---                                 | 161                        | 14                                   | 6.1                                 | 39                         | ---                                  | ---                                 |
| 16            | 12                         | ---                                  | ---                                 | 187                        | 13                                   | 6.6                                 | 36                         | ---                                  | ---                                 |
| 17            | 19                         | ---                                  | ---                                 | 183                        | 9                                    | 4.4                                 | 33                         | ---                                  | ---                                 |
| 18            | 27                         | ---                                  | ---                                 | 179                        | 6                                    | 2.9                                 | 30                         | ---                                  | ---                                 |
| 19            | 25                         | ---                                  | ---                                 | 161                        | 8                                    | 3.5                                 | 28                         | ---                                  | ---                                 |
| 20            | 16                         | ---                                  | ---                                 | 145                        | 10                                   | 3.9                                 | 26                         | ---                                  | ---                                 |
| 21            | 15                         | ---                                  | ---                                 | 123                        | 10                                   | 3.3                                 | 25                         | ---                                  | ---                                 |
| 22            | 17                         | 5                                    | .23                                 | 103                        | 8                                    | 2.2                                 | 23                         | ---                                  | ---                                 |
| 23            | 23                         | 8                                    | .50                                 | 95                         | 8                                    | 2.1                                 | 22                         | ---                                  | ---                                 |
| 24            | 30                         | 16                                   | 1.4                                 | 86                         | 6                                    | 1.4                                 | 21                         | ---                                  | ---                                 |
| 25            | 35                         | 14                                   | 1.4                                 | 82                         | 6                                    | 1.3                                 | 19                         | ---                                  | ---                                 |
| 26            | 37                         | 6                                    | .60                                 | 76                         | 6                                    | 1.2                                 | 18                         | ---                                  | ---                                 |
| 27            | 40                         | 5                                    | .54                                 | 71                         | 5                                    | .96                                 | 18                         | ---                                  | ---                                 |
| 28            | 51                         | 12                                   | 1.8                                 | 65                         | 4                                    | .70                                 | 16                         | ---                                  | ---                                 |
| 29            | 57                         | 8                                    | 1.3                                 | 61                         | 4                                    | .66                                 | 17                         | ---                                  | ---                                 |
| 30            | 61                         | 13                                   | 2.1                                 | 59                         | 6                                    | .96                                 | 17                         | ---                                  | ---                                 |
| 31            | ---                        | ---                                  | ---                                 | 58                         | 4                                    | .63                                 | ---                        | ---                                  | ---                                 |
| TOTAL<br>YEAR | 545.7<br>6865.6            | ---                                  | ---                                 | 3294                       | ---                                  | 90.61                               | 1171                       | ---                                  | ---                                 |

## 09255000 SLATER FORK NEAR SLATER, CO

LOCATION.--Lat 40°58'57", long 107°22'56", in SW1/4 NE1/4 sec.21, T.12 N., R.89 W., Moffat County, Hydrologic Unit 14050003, on right bank 15 ft downstream from highway bridge, 1.0 mi upstream from mouth, and 1.5 mi south of Slater.

DRAINAGE AREA.--161 mi<sup>2</sup>.

PERIOD OF RECORD.--May to October, December 1910, March to October 1911, and April to May 1912 (published as Slater Creek), July 1931 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 618: 1910-11. WSP 764: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,600 ft, from river-profile map. May 28, 1910, to May 25, 1912, nonrecording gage at site 1.5 mi upstream at different datum. July 9, 1931, to May 6, 1932, nonrecording gage at site 0.2 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 19-22, 24-26, 28, Dec. 2-5, 9-18, 22-26, Dec. 28 to Jan. 1, Jan. 3, 8-10, Jan. 16 to Feb. 24, Feb. 28 to Mar. 5, Mar. 10-13, and 15. Records good except for estimated daily discharges, which are poor. Diversions for irrigation of about 500 acres upstream from station.

AVERAGE DISCHARGE.--56 years (water years 1932-87), 78.8 ft<sup>3</sup>/s; 57,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,250 ft<sup>3</sup>/s May 16, 1984, gage height, 11.78 ft (from floodmark), from rating curve extended above 1,000 ft<sup>3</sup>/s; no flow Aug. 2-10, 1934, Aug. 18, 25-27, 1936, Aug. 29 to Sept. 3, 1954, Aug. 3, 4, 15, 16, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 430 ft<sup>3</sup>/s, and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date   | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|--------|------|--------------------------------|------------------|
| Apr. 18 | 2200 | 528                            | 6.38             | May 13 | 0230 | 492                            | 6.19             |
| Apr. 29 | 0030 | *599                           | *6.73            |        |      |                                |                  |

Minimum daily discharge, 4.1 ft<sup>3</sup>/s, Aug. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN  | JUL   | AUG   | SEP   |
|-------|------|------|------|------|------|------|-------|-------|------|-------|-------|-------|
| 1     | 41   | 64   | 39   | 18   | 30   | 13   | 51    | 426   | 128  | 36    | 12    | 8.4   |
| 2     | 43   | 57   | 43   | 17   | 31   | 17   | 61    | 399   | 118  | 27    | 12    | 8.0   |
| 3     | 55   | 52   | 40   | 18   | 30   | 17   | 62    | 292   | 107  | 19    | 8.3   | 6.6   |
| 4     | 43   | 50   | 40   | 19   | 30   | 20   | 77    | 242   | 99   | 15    | 6.7   | 9.3   |
| 5     | 33   | 42   | 43   | 23   | 27   | 25   | 81    | 231   | 97   | 16    | 5.5   | 12    |
| 6     | 37   | 47   | 43   | 24   | 26   | 40   | 87    | 265   | 99   | 16    | 4.9   | 12    |
| 7     | 47   | 40   | 42   | 24   | 28   | 62   | 93    | 290   | 100  | 14    | 5.3   | 10    |
| 8     | 55   | 38   | 43   | 23   | 30   | 62   | 100   | 296   | 96   | 13    | 6.8   | 8.6   |
| 9     | 54   | 44   | 25   | 22   | 30   | 47   | 99    | 303   | 119  | 12    | 8.6   | 7.8   |
| 10    | 55   | 41   | 15   | 21   | 30   | 37   | 91    | 321   | 142  | 13    | 6.9   | 7.3   |
| 11    | 62   | 49   | 20   | 23   | 30   | 40   | 94    | 306   | 105  | 14    | 7.3   | 6.9   |
| 12    | 43   | 41   | 25   | 23   | 29   | 35   | 93    | 318   | 90   | 35    | 5.6   | 7.1   |
| 13    | 43   | 49   | 24   | 24   | 31   | 40   | 81    | 416   | 78   | 43    | 4.3   | 7.1   |
| 14    | 50   | 48   | 23   | 24   | 31   | 48   | 81    | 361   | 75   | 26    | 5.0   | 7.1   |
| 15    | 44   | 41   | 23   | 24   | 28   | 37   | 119   | 350   | 66   | 18    | 7.4   | 9.7   |
| 16    | 41   | 41   | 25   | 23   | 24   | 37   | 183   | 374   | 63   | 14    | 14    | 11    |
| 17    | 40   | 41   | 23   | 21   | 23   | 33   | 255   | 335   | 55   | 13    | 14    | 12    |
| 18    | 44   | 41   | 25   | 22   | 20   | 34   | 344   | 303   | 49   | 12    | 8.4   | 14    |
| 19    | 46   | 38   | 29   | 23   | 15   | 37   | 379   | 324   | 45   | 11    | 5.6   | 12    |
| 20    | 65   | 38   | 29   | 19   | 14   | 35   | 258   | 257   | 45   | 9.6   | 4.1   | 12    |
| 21    | 94   | 40   | 29   | 20   | 12   | 35   | 183   | 247   | 44   | 9.0   | 4.1   | 11    |
| 22    | 111  | 42   | 25   | 21   | 16   | 37   | 206   | 218   | 43   | 9.1   | 4.9   | 10    |
| 23    | 94   | 44   | 25   | 23   | 20   | 31   | 308   | 201   | 37   | 8.8   | 8.2   | 9.6   |
| 24    | 88   | 42   | 23   | 25   | 25   | 34   | 408   | 184   | 28   | 7.0   | 12    | 9.6   |
| 25    | 88   | 40   | 22   | 27   | 27   | 31   | 415   | 177   | 21   | 5.8   | 14    | 9.7   |
| 26    | 83   | 42   | 21   | 28   | 23   | 30   | 392   | 178   | 19   | 6.1   | 13    | 11    |
| 27    | 86   | 43   | 20   | 28   | 24   | 30   | 399   | 169   | 16   | 7.0   | 11    | 11    |
| 28    | 89   | 45   | 21   | 30   | 23   | 29   | 464   | 155   | 16   | 7.4   | 11    | 11    |
| 29    | 85   | 43   | 20   | 31   | ---  | 30   | 456   | 139   | 16   | 9.3   | 11    | 13    |
| 30    | 67   | 43   | 23   | 30   | ---  | 30   | 380   | 164   | 21   | 11    | 10    | 14    |
| 31    | 67   | ---  | 20   | 30   | ---  | 33   | ---   | 137   | ---  | 10    | 9.0   | ---   |
| TOTAL | 1893 | 1326 | 868  | 728  | 707  | 1066 | 6300  | 8378  | 2037 | 467.1 | 260.9 | 298.8 |
| MEAN  | 61.1 | 44.2 | 28.0 | 23.5 | 25.2 | 34.4 | 210   | 270   | 67.9 | 15.1  | 8.42  | 9.96  |
| MAX   | 111  | 64   | 43   | 31   | 31   | 62   | 464   | 426   | 142  | 43    | 14    | 14    |
| MIN   | 33   | 38   | 15   | 17   | 12   | 13   | 51    | 137   | 16   | 5.8   | 4.1   | 6.6   |
| AC-FT | 3750 | 2630 | 1720 | 1440 | 1400 | 2110 | 12500 | 16620 | 4040 | 926   | 517   | 593   |

|             |               |           |         |         |             |
|-------------|---------------|-----------|---------|---------|-------------|
| CAL YR 1986 | TOTAL 48853.5 | MEAN 134  | MAX 871 | MIN 2.0 | AC-FT 96900 |
| WTR YR 1987 | TOTAL 24329.7 | MEAN 66.7 | MAX 464 | MIN 4.1 | AC-FT 48260 |



## GREEN RIVER BASIN

09255400 EAST FORK SAVERY CREEK NEAR ENCAMPMENT, WY

LOCATION.--Lat 41°16'18", long 107°09'32", in NW1/4 NE1/4 SE1/4 sec.15, T.15 N., R.87 W., Carbon County, Hydrologic Unit 14050003, Medicine Bow National Forest, on right bank 0.1 mi upstream from Strawberry Creek, 0.6 mi downstream from Joe Creek, 0.6 mi upstream from Jim Creek, and 20 mi west of Encampment.

DRAINAGE AREA.--5.57 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1956 to September 1958, April 1985 to current year.

REVISED RECORDS.--WDR WY-85-1: Drainage area. WDR WY-86-1: 1985(P).

GAGE.--Water-stage recorder. Elevation of gage is 8,210 ft above National Geodetic Vertical Datum of 1929, from topographic map. April 1956 to September 1958, at site 150 ft upstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 14-17, Nov. 1-5, 8-10, 23-30, Dec. 19, 20, 22-31, Jan. 1-10, and Apr. 15-23. Records good except those for November to January, April, August, and September, which are poor. No diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 169 ft<sup>3</sup>/s, May 22, 1958, gage height, 6.48 ft, site and datum then in use, from rating curve extended above 46 ft<sup>3</sup>/s; minimum daily discharge, 0.60 ft<sup>3</sup>/s, Aug. 30, 31, Sept. 2, 3, 1958, but may have been less during periods of ice effect in 1957-58 water years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                 | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|--------------------------------------|------|-----------------------------------|---------------------|
| Apr. 17 | 1200 | ice jam                           | *2.69               | No peak greater than base discharge. |      |                                   |                     |
| May 11  | 2400 | *32                               | 2.03                |                                      |      |                                   |                     |

Minimum daily discharge, 0.80 ft<sup>3</sup>/s, Feb. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC   | JAN   | FEB   | MAR   | APR    | MAY  | JUN   | JUL   | AUG  | SEP   |
|-------------|-------|---------|-------|-------|-------|-------|--------|------|-------|-------|------|-------|
| 1           | 2.2   | 1.6     | 1.6   | .95   | .96   | .88   | .92    | 19   | 11    | 3.6   | 1.7  | 1.1   |
| 2           | 3.2   | 1.5     | 1.6   | 1.1   | .96   | .87   | .90    | 19   | 9.8   | 3.3   | 1.5  | .99   |
| 3           | 2.9   | 1.4     | 1.6   | 1.3   | .93   | .91   | .92    | 16   | 9.3   | 3.2   | 1.4  | .93   |
| 4           | 2.2   | 1.5     | 1.6   | 1.5   | .89   | .91   | .96    | 15   | 8.9   | 3.2   | 1.4  | 1.6   |
| 5           | 2.1   | 1.6     | 1.6   | 1.6   | .83   | .93   | .89    | 15   | 8.5   | 2.9   | 1.3  | 1.7   |
| 6           | 2.2   | 1.6     | 1.6   | 1.3   | .86   | .96   | .93    | 16   | 8.4   | 2.5   | 1.2  | 1.3   |
| 7           | 2.5   | 1.6     | 1.6   | 1.1   | .86   | .99   | 1.0    | 17   | 8.2   | 2.4   | 1.7  | 1.1   |
| 8           | 2.6   | 1.4     | 1.5   | .91   | .88   | 1.0   | 1.1    | 18   | 8.0   | 2.4   | 1.7  | 1.1   |
| 9           | 2.5   | 1.3     | 1.4   | 1.1   | .91   | .94   | 1.2    | 19   | 8.8   | 2.4   | 1.3  | 1.1   |
| 10          | 2.6   | 1.4     | 1.3   | 1.2   | .91   | .93   | 1.1    | 21   | 8.5   | 2.3   | 1.1  | 1.0   |
| 11          | 2.4   | 1.5     | 1.1   | 1.3   | .91   | .94   | 1.1    | 21   | 7.5   | 2.4   | 1.1  | 1.0   |
| 12          | 2.4   | 1.5     | 1.1   | 1.5   | .85   | .94   | 1.1    | 24   | 7.0   | 2.6   | 1.0  | 1.1   |
| 13          | 2.2   | 1.5     | 1.1   | 1.4   | .86   | .92   | 1.1    | 22   | 6.5   | 2.4   | 1.0  | 1.0   |
| 14          | 2.0   | 1.6     | 1.1   | 1.4   | .91   | .95   | 1.2    | 21   | 6.1   | 2.3   | 1.0  | 1.0   |
| 15          | 2.0   | 1.6     | 1.1   | 1.3   | .91   | .96   | 1.5    | 21   | 5.9   | 2.2   | 1.7  | 1.1   |
| 16          | 2.0   | 1.5     | 1.2   | 1.2   | .91   | .96   | 2.7    | 22   | 6.4   | 2.0   | 2.3  | 1.0   |
| 17          | 2.0   | 1.5     | 1.2   | 1.2   | .90   | .94   | 4.9    | 22   | 5.5   | 2.0   | 1.4  | 1.1   |
| 18          | 2.0   | 1.5     | 1.1   | 1.2   | .88   | .95   | 6.3    | 22   | 5.2   | 2.0   | 1.2  | 1.0   |
| 19          | 2.0   | 2.1     | 1.2   | 1.2   | .86   | .94   | 5.8    | 21   | 5.0   | 1.9   | 1.1  | 1.0   |
| 20          | 2.2   | 1.7     | 1.3   | 1.2   | .85   | .91   | 4.5    | 20   | 4.7   | 1.8   | 1.0  | .98   |
| 21          | 2.1   | 1.6     | 1.3   | 1.2   | .85   | .95   | 3.6    | 19   | 4.5   | 2.0   | 1.2  | .98   |
| 22          | 2.2   | 1.5     | 1.2   | 1.1   | .82   | .96   | 4.5    | 18   | 4.4   | 1.9   | 1.4  | .98   |
| 23          | 2.0   | 1.4     | 1.1   | 1.1   | .83   | .97   | 6.0    | 16   | 4.1   | 1.8   | 2.9  | .96   |
| 24          | 1.9   | 1.6     | 1.0   | 1.0   | .82   | .96   | 8.2    | 15   | 4.1   | 1.5   | 3.1  | .94   |
| 25          | 1.8   | 1.5     | .93   | 1.0   | .80   | .97   | 9.4    | 17   | 3.9   | 1.4   | 2.7  | .93   |
| 26          | 1.8   | 1.5     | .95   | 1.0   | .84   | .93   | 9.9    | 16   | 3.8   | 1.4   | 1.9  | .92   |
| 27          | 1.7   | 1.6     | .96   | 1.0   | .85   | .91   | 11     | 15   | 3.7   | 1.4   | 1.4  | .91   |
| 28          | 1.8   | 1.7     | .99   | 1.0   | .87   | .93   | 13     | 14   | 3.6   | 2.8   | 1.4  | .89   |
| 29          | 1.8   | 1.6     | 1.0   | 1.0   | ---   | .93   | 16     | 13   | 3.6   | 2.7   | 1.3  | .93   |
| 30          | 1.8   | 1.6     | 1.0   | .96   | ---   | .91   | 16     | 12   | 3.6   | 2.2   | 1.1  | .96   |
| 31          | 2.0   | ---     | 1.0   | .96   | ---   | .93   | ---    | 11   | ---   | 1.9   | 1.1  | ---   |
| TOTAL       | 67.1  | 46.5    | 38.33 | 36.28 | 24.51 | 29.08 | 137.72 | 557  | 188.5 | 70.8  | 46.6 | 31.60 |
| MEAN        | 2.16  | 1.55    | 1.24  | 1.17  | .88   | .94   | 4.59   | 18.0 | 6.28  | 2.28  | 1.50 | 1.05  |
| MAX         | 3.2   | 2.1     | 1.6   | 1.6   | .96   | 1.0   | 16     | 24   | 11    | 3.6   | 3.1  | 1.7   |
| MIN         | 1.7   | 1.3     | .93   | .91   | .80   | .87   | .89    | 11   | 3.6   | 1.4   | 1.0  | .89   |
| AC-FT       | 133   | 92      | 76    | 72    | 49    | 58    | 273    | 1100 | 374   | 140   | 92   | 63    |
| CAL YR 1986 | TOTAL | 2839.63 |       | MEAN  | 7.78  | MAX   | 75     | MIN  | .93   | AC-FT | 5630 |       |
| WTR YR 1987 | TOTAL | 1274.02 |       | MEAN  | 3.49  | MAX   | 24     | MIN  | .80   | AC-FT | 2530 |       |

09255400 EAST FORK SAVERY CREEK NEAR ENCAMPMENT, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1986 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April to July 1986, April to June 1987 (discontinued).

SUSPENDED-SEDIMENT DISCHARGE: April to July 1986, April to June 1987 (discontinued).

INSTRUMENTATION.--Pumping sampler, April to July 1986, April to June 1987.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily mean during period of operation, 132 microsiemens, Apr. 22, 1987; minimum daily mean during period of operation, 60 microsiemens, June 10, 1986.

SEDIMENT CONCENTRATION: Maximum daily mean during period of operation, 112 mg/L, May 21, 1986; minimum daily mean during period of operation, 4 mg/L, May 15, 1986, June 8, 1987.

SEDIMENT LOAD: Maximum daily mean during period of operation, 22 tons, June 10, 1986; minimum daily mean during period of operation, 0.09 ton, June 8, 1987.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily mean during period of operation, 132 microsiemens, Apr. 22; minimum daily mean during period of operation, 76 microsiemens, May 12, 17.

SEDIMENT CONCENTRATION: Maximum daily mean during period of operation, 89 mg/L, Apr. 22, 24; minimum daily mean during period of operation, 4 mg/L, June 8.

SEDIMENT LOAD: Maximum daily mean during period of operation, 3.4 tons, May 1; minimum daily mean during period of operation, 0.09 ton, June 8.

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     |     |     |     |     |     | --- | 107 | 66  | --- | --- |     |
| 2   |     |     |     |     |     |     | --- | 102 | 65  | 97  | --- |     |
| 3   |     |     |     |     |     |     | --- | 94  | 62  | --- | --- |     |
| 4   |     |     |     |     |     |     | --- | 86  | 63  | --- | --- |     |
| 5   |     |     |     |     |     |     | --- | 85  | 63  | --- | --- |     |
| 6   |     |     |     |     |     |     | --- | 86  | 62  | --- | --- |     |
| 7   |     |     |     |     |     |     | --- | 87  | 63  | --- | --- |     |
| 8   |     |     |     |     |     |     | --- | 89  | 64  | --- | --- |     |
| 9   |     |     |     |     |     |     | --- | 91  | 62  | --- | --- |     |
| 10  |     |     |     |     |     |     | --- | 95  | 60  | --- | --- |     |
| 11  |     |     |     |     |     |     | --- | 96  | 65  | --- | 137 |     |
| 12  |     |     |     |     |     |     | --- | 94  | 69  | --- | --- |     |
| 13  |     |     |     |     |     |     | --- | 92  | 70  | --- | --- |     |
| 14  |     |     |     |     |     |     | --- | 92  | 72  | --- | --- |     |
| 15  |     |     |     |     |     |     | --- | 92  | 72  | --- | --- |     |
| 16  |     |     |     |     |     |     | --- | 91  | 72  | --- | --- |     |
| 17  |     |     |     |     |     |     | --- | 92  | 73  | --- | --- |     |
| 18  |     |     |     |     |     |     | --- | 90  | 72  | --- | --- |     |
| 19  |     |     |     |     |     |     | --- | 85  | 74  | --- | --- |     |
| 20  |     |     |     |     |     |     | --- | 78  | 75  | --- | --- |     |
| 21  |     |     |     |     |     |     | --- | 75  | 77  | --- | --- |     |
| 22  |     |     |     |     |     |     | --- | 71  | 79  | --- | --- |     |
| 23  |     |     |     |     |     |     | --- | 74  | 80  | --- | --- |     |
| 24  |     |     |     |     |     |     | --- | 70  | 82  | --- | --- |     |
| 25  |     |     |     |     |     |     | --- | 66  | 84  | --- | --- |     |
| 26  |     |     |     |     |     |     | --- | 64  | 85  | --- | --- |     |
| 27  |     |     |     |     |     |     | --- | --- | 86  | --- | --- |     |
| 28  |     |     |     |     |     |     | --- | --- | 88  | --- | --- |     |
| 29  |     |     |     |     |     |     | --- | --- | 90  | --- | --- |     |
| 30  |     |     |     |     |     |     | 111 | --- | 92  | --- | --- |     |
| 31  |     |     |     |     |     |     | --- | --- | --- | --- | --- |     |

## GREEN RIVER BASIN

09255400 EAST FORK SAVERY CREEK NEAR ENCAMPMENT, WY--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     |     |     |     |     |     | --- | 85  | 96  |     |     |     |
| 2   |     |     |     |     |     |     | --- | 84  | 98  |     |     |     |
| 3   |     |     |     |     |     |     | --- | 85  | 100 |     |     |     |
| 4   |     |     |     |     |     |     | --- | 86  | 102 |     |     |     |
| 5   |     |     |     |     |     |     | --- | 88  | 104 |     |     |     |
| 6   |     |     |     |     |     |     | --- | 88  | 105 |     |     |     |
| 7   |     |     |     |     |     |     | --- | 86  | 106 |     |     |     |
| 8   |     |     |     |     |     |     | --- | 83  | 106 |     |     |     |
| 9   |     |     |     |     |     |     | --- | 80  | 104 |     |     |     |
| 10  |     |     |     |     |     |     | --- | 79  | 104 |     |     |     |
| 11  |     |     |     |     |     |     | --- | 78  | 100 |     |     |     |
| 12  |     |     |     |     |     |     | --- | 76  | --- |     |     |     |
| 13  |     |     |     |     |     |     | --- | 77  | --- |     |     |     |
| 14  |     |     |     |     |     |     | --- | 77  | --- |     |     |     |
| 15  |     |     |     |     |     |     | --- | 78  | --- |     |     |     |
| 16  |     |     |     |     |     |     | --- | 77  | --- |     |     |     |
| 17  |     |     |     |     |     |     | --- | 76  | --- |     |     |     |
| 18  |     |     |     |     |     |     | --- | 77  | --- |     |     |     |
| 19  |     |     |     |     |     |     | --- | 78  | --- |     |     |     |
| 20  |     |     |     |     |     |     | --- | 81  | --- |     |     |     |
| 21  |     |     |     |     |     |     | --- | 82  | --- |     |     |     |
| 22  |     |     |     |     |     |     | 132 | 84  | --- |     |     |     |
| 23  |     |     |     |     |     |     | 120 | 85  | --- |     |     |     |
| 24  |     |     |     |     |     |     | 116 | 88  | --- |     |     |     |
| 25  |     |     |     |     |     |     | 113 | 86  | --- |     |     |     |
| 26  |     |     |     |     |     |     | 108 | 87  | --- |     |     |     |
| 27  |     |     |     |     |     |     | 104 | --- | --- |     |     |     |
| 28  |     |     |     |     |     |     | 100 | --- | --- |     |     |     |
| 29  |     |     |     |     |     |     | 93  | 93  | --- |     |     |     |
| 30  |     |     |     |     |     |     | 90  | 92  | --- |     |     |     |
| 31  |     |     |     |     |     |     | --- | 94  | --- |     |     |     |

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY           | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|---------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
|               |                            | APRIL                                |                                     |                            | MAY                                  |                                     |                            | JUNE                                 |                                     |
| 1             | .92                        | ---                                  | ---                                 | 19                         | 66                                   | 3.4                                 | 11                         | 7                                    | .21                                 |
| 2             | .90                        | ---                                  | ---                                 | 19                         | 47                                   | 2.4                                 | 9.8                        | 7                                    | .19                                 |
| 3             | .92                        | ---                                  | ---                                 | 16                         | 26                                   | 1.1                                 | 9.3                        | 6                                    | .15                                 |
| 4             | .96                        | ---                                  | ---                                 | 15                         | 25                                   | 1.0                                 | 8.9                        | 6                                    | .14                                 |
| 5             | .89                        | ---                                  | ---                                 | 15                         | 23                                   | .93                                 | 8.6                        | 5                                    | .12                                 |
| 6             | .93                        | ---                                  | ---                                 | 16                         | 25                                   | 1.1                                 | 8.4                        | 5                                    | .11                                 |
| 7             | 1.0                        | ---                                  | ---                                 | 17                         | 26                                   | 1.2                                 | 8.2                        | 6                                    | .13                                 |
| 8             | 1.1                        | ---                                  | ---                                 | 18                         | 24                                   | 1.2                                 | 8.0                        | 4                                    | .09                                 |
| 9             | 1.2                        | ---                                  | ---                                 | 19                         | 24                                   | 1.2                                 | 8.8                        | 6                                    | .14                                 |
| 10            | 1.1                        | ---                                  | ---                                 | 21                         | 28                                   | 1.6                                 | 8.5                        | 5                                    | .11                                 |
| 11            | 1.1                        | ---                                  | ---                                 | 21                         | 32                                   | 1.8                                 | 7.5                        | 6                                    | .12                                 |
| 12            | 1.1                        | ---                                  | ---                                 | 24                         | 49                                   | 3.2                                 | 7.0                        | ---                                  | ---                                 |
| 13            | 1.1                        | ---                                  | ---                                 | 22                         | 23                                   | 1.4                                 | 6.5                        | ---                                  | ---                                 |
| 14            | 1.2                        | ---                                  | ---                                 | 21                         | 27                                   | 1.5                                 | 6.1                        | ---                                  | ---                                 |
| 15            | 1.5                        | ---                                  | ---                                 | 21                         | 32                                   | 1.8                                 | 5.9                        | ---                                  | ---                                 |
| 16            | 2.7                        | ---                                  | ---                                 | 22                         | 24                                   | 1.4                                 | 6.4                        | ---                                  | ---                                 |
| 17            | 4.9                        | ---                                  | ---                                 | 22                         | 27                                   | 1.6                                 | 5.5                        | ---                                  | ---                                 |
| 18            | 6.3                        | ---                                  | ---                                 | 22                         | 14                                   | .83                                 | 5.2                        | ---                                  | ---                                 |
| 19            | 5.8                        | ---                                  | ---                                 | 21                         | 19                                   | 1.1                                 | 5.0                        | ---                                  | ---                                 |
| 20            | 4.5                        | ---                                  | ---                                 | 20                         | 13                                   | .70                                 | 4.8                        | ---                                  | ---                                 |
| 21            | 3.6                        | ---                                  | ---                                 | 19                         | 17                                   | .87                                 | 4.5                        | ---                                  | ---                                 |
| 22            | 4.5                        | 89                                   | 1.1                                 | 18                         | 22                                   | 1.1                                 | 4.4                        | ---                                  | ---                                 |
| 23            | 6.0                        | 45                                   | .73                                 | 16                         | 14                                   | .60                                 | 4.2                        | ---                                  | ---                                 |
| 24            | 8.2                        | 89                                   | 2.0                                 | 15                         | 13                                   | .53                                 | 4.1                        | ---                                  | ---                                 |
| 25            | 9.4                        | 61                                   | 1.5                                 | 17                         | 15                                   | .69                                 | 3.9                        | ---                                  | ---                                 |
| 26            | 9.9                        | 36                                   | .96                                 | 16                         | 11                                   | .48                                 | 3.8                        | ---                                  | ---                                 |
| 27            | 11                         | 21                                   | .62                                 | 15                         | 10                                   | .41                                 | 3.7                        | ---                                  | ---                                 |
| 28            | 13                         | 26                                   | .91                                 | 14                         | 9                                    | .34                                 | 3.6                        | ---                                  | ---                                 |
| 29            | 16                         | 35                                   | 1.5                                 | 13                         | 8                                    | .28                                 | 3.6                        | ---                                  | ---                                 |
| 30            | 16                         | 50                                   | 2.2                                 | 12                         | 7                                    | .23                                 | 3.6                        | ---                                  | ---                                 |
| 31            | ---                        | ---                                  | ---                                 | 11                         | 9                                    | .27                                 | ---                        | ---                                  | ---                                 |
| TOTAL<br>YEAR | 137.72<br>1275.12          | ---                                  | ---                                 | 557                        | ---                                  | 36.26                               | 188.8                      | ---                                  | ---                                 |

## 09255900 BIG SANDSTONE CREEK NEAR SAVERY, WY

LOCATION.--Lat 41°12'02", long 107°10'33", in SE1/4 SE1/4 NE1/4 sec.9, T.14 N., R.87 W., Carbon County, Hydrologic Unit 14050003, Medicine Bow National Forest, on right bank 300 ft downstream from Douglas Creek, 3.1 mi upstream from Mill Creek, and 19 mi northeast of Savery.

DRAINAGE AREA.--9.85 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1956 to September 1958, April 1985 to current year.

REVISED RECORDS.--WDR WY-85-1: Drainage area. WDR WY-86-1: 1985(P).

GAGE.--Water-stage recorder. Elevation of gage is 8,270 ft above National Geodetic Vertical Datum of 1929, from topographic map. April 1956 to September 1958, at site 200 ft upstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 12, 13, 31, Nov. 1-13, 19, 23, and Apr. 16-22. Records good except those for estimated daily discharges, which are poor. No diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 292 ft<sup>3</sup>/s, June 9, 1986, gage height, 3.96 ft; minimum daily, 1.1 ft<sup>3</sup>/s, Sept. 15, 16, 1956, Oct. 6, 1956, Sept. 21, 22, 1958.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                       | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|--------------------------------------------|------|--------------------------------|------------------|
| Apr. 18 | 0300 | ice jam                        | *3.02            | No other peak greater than base discharge. |      |                                |                  |
| May 16  | 1830 | *118                           | 3.01             |                                            |      |                                |                  |

Minimum daily discharge, 1.8 ft<sup>3</sup>/s, Jan. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR   | MAY  | JUN   | JUL   | AUG   | SEP  |
|-------------|-------|--------|------|------|------|------|-------|------|-------|-------|-------|------|
| 1           | 4.7   | 4.5    | 2.8  | 1.8  | 2.0  | 1.9  | 2.1   | 47   | 32    | 6.9   | 3.3   | 2.3  |
| 2           | 6.9   | 4.1    | 2.7  | 1.9  | 2.0  | 1.9  | 2.1   | 45   | 32    | 6.2   | 2.9   | 2.2  |
| 3           | 6.5   | 4.0    | 2.7  | 2.0  | 2.0  | 1.9  | 2.2   | 39   | 31    | 5.8   | 2.7   | 2.2  |
| 4           | 5.3   | 4.2    | 2.6  | 2.0  | 2.0  | 1.9  | 2.2   | 35   | 30    | 5.7   | 2.7   | 2.5  |
| 5           | 5.1   | 4.5    | 2.6  | 2.1  | 2.0  | 2.0  | 2.1   | 37   | 31    | 5.4   | 2.6   | 2.4  |
| 6           | 5.5   | 4.5    | 2.6  | 2.1  | 1.9  | 2.1  | 2.3   | 42   | 30    | 5.1   | 2.7   | 2.3  |
| 7           | 6.0   | 4.2    | 2.7  | 2.1  | 1.9  | 2.2  | 2.8   | 49   | 29    | 4.9   | 4.0   | 2.2  |
| 8           | 6.2   | 3.8    | 2.6  | 2.1  | 1.9  | 2.2  | 3.2   | 57   | 29    | 4.8   | 3.7   | 2.1  |
| 9           | 6.4   | 3.5    | 2.5  | 2.1  | 2.0  | 2.1  | 3.0   | 62   | 30    | 4.6   | 2.8   | 2.1  |
| 10          | 6.4   | 3.3    | 2.3  | 2.1  | 2.0  | 2.1  | 2.7   | 63   | 28    | 4.4   | 2.6   | 2.1  |
| 11          | 5.2   | 3.3    | 2.3  | 2.1  | 2.0  | 2.1  | 2.7   | 67   | 25    | 4.8   | 2.6   | 2.1  |
| 12          | 4.5   | 3.4    | 2.2  | 2.1  | 2.0  | 2.1  | 2.6   | 92   | 22    | 5.9   | 2.5   | 2.0  |
| 13          | 5.0   | 3.4    | 2.3  | 2.1  | 2.0  | 2.1  | 2.5   | 88   | 20    | 4.8   | 2.5   | 2.0  |
| 14          | 4.8   | 3.5    | 2.2  | 2.1  | 2.1  | 2.1  | 2.6   | 92   | 18    | 4.3   | 2.5   | 2.0  |
| 15          | 4.8   | 3.4    | 2.2  | 2.1  | 2.0  | 2.1  | 3.6   | 98   | 17    | 4.0   | 4.2   | 2.1  |
| 16          | 4.8   | 3.4    | 2.2  | 2.1  | 2.0  | 2.1  | 5.5   | 106  | 17    | 3.8   | 4.3   | 2.1  |
| 17          | 4.9   | 3.4    | 2.2  | 1.9  | 2.0  | 2.1  | 10    | 104  | 15    | 3.9   | 2.8   | 2.1  |
| 18          | 4.9   | 3.4    | 2.0  | 1.9  | 2.0  | 2.1  | 19    | 100  | 14    | 3.8   | 2.6   | 2.0  |
| 19          | 5.2   | 3.4    | 2.1  | 1.9  | 2.0  | 2.1  | 16    | 88   | 13    | 3.6   | 2.5   | 2.0  |
| 20          | 5.5   | 3.6    | 2.1  | 1.9  | 2.0  | 2.0  | 10    | 80   | 12    | 3.4   | 2.4   | 2.0  |
| 21          | 5.2   | 3.6    | 2.1  | 1.9  | 1.9  | 2.1  | 7.7   | 72   | 12    | 3.4   | 2.5   | 2.0  |
| 22          | 5.2   | 3.4    | 2.1  | 1.9  | 1.9  | 2.1  | 9.5   | 62   | 11    | 3.5   | 2.6   | 2.0  |
| 23          | 5.4   | 3.3    | 2.1  | 1.9  | 2.0  | 2.1  | 12    | 57   | 9.7   | 3.2   | 3.1   | 2.0  |
| 24          | 5.4   | 3.3    | 2.1  | 1.9  | 1.9  | 2.1  | 17    | 53   | 9.4   | 3.0   | 4.1   | 2.0  |
| 25          | 5.0   | 3.1    | 2.0  | 1.9  | 1.9  | 2.1  | 21    | 53   | 8.9   | 3.0   | 3.7   | 2.0  |
| 26          | 4.8   | 3.0    | 2.0  | 2.0  | 1.9  | 2.0  | 23    | 50   | 8.4   | 3.0   | 3.0   | 2.0  |
| 27          | 4.7   | 2.9    | 2.0  | 2.0  | 1.9  | 2.1  | 26    | 44   | 7.9   | 2.9   | 2.7   | 1.9  |
| 28          | 4.8   | 2.9    | 2.1  | 2.0  | 1.9  | 2.0  | 31    | 41   | 7.4   | 3.7   | 2.6   | 1.9  |
| 29          | 4.6   | 2.9    | 2.0  | 2.0  | ---  | 2.0  | 35    | 39   | 7.3   | 3.8   | 2.6   | 2.0  |
| 30          | 5.0   | 2.9    | 2.0  | 2.0  | ---  | 1.9  | 39    | 36   | 7.2   | 3.4   | 2.4   | 1.9  |
| 31          | 5.2   | ---    | 1.9  | 2.1  | ---  | 2.0  | ---   | 33   | ---   | 3.6   | 2.3   | ---  |
| TOTAL       | 163.9 | 106.1  | 70.3 | 62.1 | 55.1 | 63.7 | 320.4 | 1931 | 564.2 | 132.6 | 90.5  | 62.5 |
| MEAN        | 5.29  | 3.54   | 2.27 | 2.00 | 1.97 | 2.05 | 10.7  | 62.3 | 18.8  | 4.28  | 2.92  | 2.08 |
| MAX         | 6.9   | 4.5    | 2.8  | 2.1  | 2.1  | 2.2  | 39    | 106  | 32    | 6.9   | 4.3   | 2.5  |
| MIN         | 4.5   | 2.9    | 1.9  | 1.8  | 1.9  | 1.9  | 2.1   | 33   | 7.2   | 2.9   | 2.3   | 1.9  |
| AC-FT       | 325   | 210    | 139  | 123  | 109  | 126  | 636   | 3830 | 1120  | 263   | 180   | 124  |
| CAL YR 1986 | TOTAL | 7739.4 |      | MEAN | 21.2 | MAX  | 236   | MIN  | 1.6   | AC-FT | 15350 |      |
| WTR YR 1987 | TOTAL | 3622.4 |      | MEAN | 9.92 | MAX  | 106   | MIN  | 1.8   | AC-FT | 7190  |      |

09255900 BIG SANDSTONE CREEK NEAR SAVERY, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1986 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May to July 1986, April to June 1987 (discontinued).

SUSPENDED-SEDIMENT DISCHARGE: May to July 1986, April to June 1987 (discontinued).

INSTRUMENTATION.--Pumping sampler, May to July 1986, April to June 1987.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily mean during period of operation, 64 microsiemens, June 6, 1987; minimum daily mean during period of operation, 30 microsiemens, June 1, 7, 1986.

SEDIMENT CONCENTRATION: Maximum daily mean during period of operation, 69 mg/L, May 21, 1986; minimum daily mean during period of operation, 1 mg/L, June 20, 22, 23, 24, 25, 26, 1986, May 24, 25, 26, 1987.

SEDIMENT LOAD: Maximum daily mean during period of operation, 35 tons, June 2, 1986; minimum daily mean during period of operation, 0.14 ton, May 24, 25, 26, 1987.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily mean during period of operation, 64 microsiemens, June 6, minimum daily mean during period of operation, 36 microsiemens, May 10, 11.

SEDIMENT CONCENTRATION: Maximum daily mean during period of operation, 47 mg/L, Apr. 25; minimum daily mean during period of operation, 1 mg/L, May 24, 25, 26.

SEDIMENT LOAD: Maximum daily mean during period of operation, 9.4 tons, May 12; minimum daily mean during period of operation, 0.14 ton, May 24, 25, 26.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG C), WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     |     |     |     |     |     | --- | 62  | 30  | 38  | --- |     |
| 2   |     |     |     |     |     |     | --- | 55  | 32  | 41  | --- |     |
| 3   |     |     |     |     |     |     | --- | 48  | 35  | --- | --- |     |
| 4   |     |     |     |     |     |     | --- | 47  | 42  | --- | --- |     |
| 5   |     |     |     |     |     |     | --- | 51  | 32  | --- | --- |     |
| 6   |     |     |     |     |     |     | --- | 51  | 31  | --- | --- |     |
| 7   |     |     |     |     |     |     | --- | 42  | 30  | --- | --- |     |
| 8   |     |     |     |     |     |     | --- | 43  | 33  | --- | --- |     |
| 9   |     |     |     |     |     |     | --- | --- | 32  | --- | --- |     |
| 10  |     |     |     |     |     |     | --- | 43  | --- | --- | --- |     |
| 11  |     |     |     |     |     |     | --- | 44  | 41  | --- | 65  |     |
| 12  |     |     |     |     |     |     | --- | 43  | 50  | --- | --- |     |
| 13  |     |     |     |     |     |     | --- | 42  | 43  | --- | --- |     |
| 14  |     |     |     |     |     |     | --- | 41  | 45  | --- | --- |     |
| 15  |     |     |     |     |     |     | --- | 41  | 38  | --- | --- |     |
| 16  |     |     |     |     |     |     | --- | 41  | 34  | --- | --- |     |
| 17  |     |     |     |     |     |     | --- | 42  | 33  | --- | --- |     |
| 18  |     |     |     |     |     |     | --- | 41  | 32  | --- | --- |     |
| 19  |     |     |     |     |     |     | --- | 38  | 36  | --- | --- |     |
| 20  |     |     |     |     |     |     | --- | 36  | 54  | --- | --- |     |
| 21  |     |     |     |     |     |     | --- | 35  | 45  | --- | --- |     |
| 22  |     |     |     |     |     |     | --- | 34  | 51  | --- | --- |     |
| 23  |     |     |     |     |     |     | --- | 35  | 35  | --- | --- |     |
| 24  |     |     |     |     |     |     | --- | 36  | 38  | --- | --- |     |
| 25  |     |     |     |     |     |     | --- | 35  | 36  | --- | --- |     |
| 26  |     |     |     |     |     |     | --- | 34  | 36  | --- | --- |     |
| 27  |     |     |     |     |     |     | --- | 33  | 40  | --- | --- |     |
| 28  |     |     |     |     |     |     | --- | 32  | 38  | --- | --- |     |
| 29  |     |     |     |     |     |     | --- | 31  | 40  | --- | --- |     |
| 30  |     |     |     |     |     |     | 52  | 31  | 38  | --- | --- |     |
| 31  |     |     |     |     |     |     | --- | 31  | --- | --- | --- |     |

09255900 BIG SANDSTONE CREEK NEAR SAVERY, WY--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1   |     |     |     |     |     |     | --- | 40  | 56  |     |     |     |
| 2   |     |     |     |     |     |     | --- | 39  | 63  |     |     |     |
| 3   |     |     |     |     |     |     | --- | 45  | 54  |     |     |     |
| 4   |     |     |     |     |     |     | --- | 40  | 53  |     |     |     |
| 5   |     |     |     |     |     |     | --- | 41  | 60  |     |     |     |
| 6   |     |     |     |     |     |     | --- | 48  | 64  |     |     |     |
| 7   |     |     |     |     |     |     | --- | 45  | 50  |     |     |     |
| 8   |     |     |     |     |     |     | --- | 37  | 62  |     |     |     |
| 9   |     |     |     |     |     |     | --- | 37  | 53  |     |     |     |
| 10  |     |     |     |     |     |     | --- | 36  | 43  |     |     |     |
| 11  |     |     |     |     |     |     | --- | 36  | --- |     |     |     |
| 12  |     |     |     |     |     |     | --- | --- | --- |     |     |     |
| 13  |     |     |     |     |     |     | --- | --- | --- |     |     |     |
| 14  |     |     |     |     |     |     | --- | --- | --- |     |     |     |
| 15  |     |     |     |     |     |     | --- | --- | --- |     |     |     |
| 16  |     |     |     |     |     |     | --- | --- | --- |     |     |     |
| 17  |     |     |     |     |     |     | --- | --- | --- |     |     |     |
| 18  |     |     |     |     |     |     | --- | --- | --- |     |     |     |
| 19  |     |     |     |     |     |     | --- | 38  | --- |     |     |     |
| 20  |     |     |     |     |     |     | --- | 42  | --- |     |     |     |
| 21  |     |     |     |     |     |     | --- | 37  | --- |     |     |     |
| 22  |     |     |     |     |     |     | 63  | 38  | --- |     |     |     |
| 23  |     |     |     |     |     |     | 57  | 42  | --- |     |     |     |
| 24  |     |     |     |     |     |     | 54  | 51  | --- |     |     |     |
| 25  |     |     |     |     |     |     | 46  | 49  | --- |     |     |     |
| 26  |     |     |     |     |     |     | 48  | 48  | --- |     |     |     |
| 27  |     |     |     |     |     |     | 51  | 47  | --- |     |     |     |
| 28  |     |     |     |     |     |     | 55  | 49  | --- |     |     |     |
| 29  |     |     |     |     |     |     | 46  | 51  | --- |     |     |     |
| 30  |     |     |     |     |     |     | 40  | 54  | --- |     |     |     |
| 31  |     |     |     |     |     |     | --- | 56  | --- |     |     |     |

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DAY           | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|---------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| APRIL         |                            |                                      | MAY                                 |                            |                                      | JUNE                                |                            |                                      |                                     |
| 1             | 2.1                        | ---                                  | ---                                 | 47                         | 12                                   | 1.5                                 | 32                         | 4                                    | .35                                 |
| 2             | 2.1                        | ---                                  | ---                                 | 45                         | 12                                   | 1.5                                 | 32                         | 8                                    | .69                                 |
| 3             | 2.2                        | ---                                  | ---                                 | 39                         | 11                                   | 1.2                                 | 31                         | 5                                    | .42                                 |
| 4             | 2.2                        | ---                                  | ---                                 | 35                         | 8                                    | .76                                 | 30                         | 3                                    | .24                                 |
| 5             | 2.1                        | ---                                  | ---                                 | 37                         | 8                                    | .80                                 | 31                         | 5                                    | .42                                 |
| 6             | 2.3                        | ---                                  | ---                                 | 42                         | 8                                    | .91                                 | 30                         | 5                                    | .41                                 |
| 7             | 2.9                        | ---                                  | ---                                 | 49                         | 10                                   | 1.3                                 | 29                         | 3                                    | .23                                 |
| 8             | 3.2                        | ---                                  | ---                                 | 57                         | 14                                   | 2.2                                 | 29                         | 3                                    | .23                                 |
| 9             | 3.0                        | ---                                  | ---                                 | 62                         | 11                                   | 1.8                                 | 30                         | 4                                    | .32                                 |
| 10            | 2.7                        | ---                                  | ---                                 | 63                         | 16                                   | 2.7                                 | 28                         | 2                                    | .15                                 |
| 11            | 2.7                        | ---                                  | ---                                 | 67                         | 22                                   | 4.0                                 | 25                         | ---                                  | ---                                 |
| 12            | 2.6                        | ---                                  | ---                                 | 92                         | 38                                   | 9.4                                 | 22                         | ---                                  | ---                                 |
| 13            | 2.5                        | ---                                  | ---                                 | 88                         | 33                                   | 7.8                                 | 20                         | ---                                  | ---                                 |
| 14            | 2.6                        | ---                                  | ---                                 | 92                         | 30                                   | 7.5                                 | 18                         | ---                                  | ---                                 |
| 15            | 3.6                        | ---                                  | ---                                 | 98                         | 24                                   | 6.4                                 | 17                         | ---                                  | ---                                 |
| 16            | 5.5                        | ---                                  | ---                                 | 106                        | 15                                   | 4.3                                 | 17                         | ---                                  | ---                                 |
| 17            | 10                         | ---                                  | ---                                 | 104                        | 12                                   | 3.4                                 | 15                         | ---                                  | ---                                 |
| 18            | 19                         | ---                                  | ---                                 | 100                        | 9                                    | 2.4                                 | 14                         | ---                                  | ---                                 |
| 19            | 16                         | ---                                  | ---                                 | 88                         | 7                                    | 1.7                                 | 13                         | ---                                  | ---                                 |
| 20            | 10                         | ---                                  | ---                                 | 80                         | 8                                    | 1.7                                 | 12                         | ---                                  | ---                                 |
| 21            | 7.7                        | ---                                  | ---                                 | 72                         | 5                                    | .97                                 | 12                         | ---                                  | ---                                 |
| 22            | 9.5                        | 26                                   | .67                                 | 62                         | 4                                    | .67                                 | 11                         | ---                                  | ---                                 |
| 23            | 12                         | 36                                   | 1.2                                 | 57                         | 2                                    | .31                                 | 9.7                        | ---                                  | ---                                 |
| 24            | 17                         | 46                                   | 2.1                                 | 53                         | 1                                    | .14                                 | 9.4                        | ---                                  | ---                                 |
| 25            | 21                         | 47                                   | 2.7                                 | 53                         | 1                                    | .14                                 | 8.9                        | ---                                  | ---                                 |
| 26            | 23                         | 14                                   | .87                                 | 50                         | 1                                    | .14                                 | 8.4                        | ---                                  | ---                                 |
| 27            | 26                         | 20                                   | 1.6                                 | 44                         | 2                                    | .24                                 | 7.9                        | ---                                  | ---                                 |
| 28            | 31                         | 14                                   | 1.2                                 | 41                         | 3                                    | .33                                 | 7.4                        | ---                                  | ---                                 |
| 29            | 35                         | 14                                   | 1.3                                 | 39                         | 8                                    | .84                                 | 7.3                        | ---                                  | ---                                 |
| 30            | 39                         | 12                                   | 1.3                                 | 36                         | 6                                    | .58                                 | 7.2                        | ---                                  | ---                                 |
| 31            | ---                        | ---                                  | ---                                 | 33                         | 5                                    | .45                                 | ---                        | ---                                  | ---                                 |
| TOTAL<br>YEAR | 320.5<br>3623.6            | ---                                  | ---                                 | 1931                       | ---                                  | 68.08                               | 564.2                      | ---                                  | ---                                 |



09256000 SAVERY CREEK NEAR SAVERY, WY

LOCATION.--Lat 41°05'46", long 107°22'44", in SE1/4 NW1/4 SW1/4 sec.14, T.13 N., R.89 W., Carbon County, Hydrologic Unit 14050003, on right bank 800 ft downstream from bridge on county road, 1.8 mi downstream from Loco Creek, and 6.1 mi northeast of Savery.

DRAINAGE AREA.--330 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1941 to September 1946, October 1947 to September 1971, April to September 1972, April 1985 to current year.

REVISED RECORDS.--WDR WY-70-1: 1969.

GAGE.--Water-stage recorder. Elevation of gage is 6,680 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 17, 1946, at site 300 ft right of county bridge (on abandoned channel) 800 ft upstream at different datum. October 1947 to September 1972, at county bridge 800 ft upstream at different datum. Records collected at all sites include flow from Big Gulch.

REMARKS.--Estimated daily discharges: Nov. 1-5, 8-15, 23, 24, 26, 27, 30, Dec. 1-4, Dec. 9 to Mar. 9, and Mar. 28 to Apr. 2. Records good except those for estimated daily discharges, which are poor. Diversions upstream from station for irrigation of about 780 acres, of which about 140 acres are downstream from station.

AVERAGE DISCHARGE.--31 years (water years 1942-46, 1948-71, 1986-87), 106 ft<sup>3</sup>/s, 76,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,670 ft<sup>3</sup>/s, May 4, 1952, gage height, 7.30 ft, site and datum then in use, from rating curve extended above 1,100 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; no flow Sept. 1, 2, 8-10, 1959, Aug. 7, 10-22, Sept. 15, 16, 1960.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1984, reached a stage of 7.8 ft, present site and datum, from floodmarks, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------|------|-----------------------------------|---------------------|
| Mar. 7  | 0800 | 462                               | 4.11                | Apr. 17 | 0100 | 977                               | 4.51                |
| Mar. 14 | 0700 | 313                               | 3.53                | Apr. 23 | 2230 | 506                               | 3.84                |
| Apr. 7  | 0200 | *1,220                            | *4.82               |         |      |                                   |                     |

Minimum daily discharge, 8.0 ft<sup>3</sup>/s, Aug. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV     | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN  | JUL   | AUG    | SEP   |
|-------------|-------|---------|------|------|------|------|-------|-------|------|-------|--------|-------|
| 1           | 85    | 58      | 38   | 42   | 48   | 46   | 60    | 348   | 134  | 31    | 14     | 12    |
| 2           | 105   | 49      | 50   | 43   | 50   | 48   | 97    | 352   | 124  | 29    | 14     | 12    |
| 3           | 119   | 50      | 58   | 45   | 51   | 51   | 171   | 317   | 118  | 23    | 11     | 11    |
| 4           | 92    | 53      | 53   | 46   | 51   | 55   | 453   | 254   | 115  | 19    | 8.9    | 14    |
| 5           | 73    | 58      | 56   | 47   | 49   | 64   | 581   | 222   | 117  | 18    | 8.3    | 19    |
| 6           | 68    | 66      | 53   | 45   | 48   | 130  | 643   | 216   | 113  | 18    | 8.0    | 20    |
| 7           | 65    | 64      | 54   | 43   | 49   | 255  | 621   | 213   | 108  | 17    | 9.8    | 16    |
| 8           | 66    | 48      | 53   | 41   | 51   | 270  | 513   | 216   | 108  | 17    | 17     | 14    |
| 9           | 65    | 45      | 48   | 39   | 53   | 250  | 536   | 222   | 136  | 15    | 20     | 14    |
| 10          | 61    | 41      | 40   | 39   | 55   | 174  | 294   | 220   | 145  | 13    | 14     | 13    |
| 11          | 60    | 43      | 39   | 41   | 55   | 133  | 315   | 224   | 120  | 15    | 12     | 12    |
| 12          | 48    | 47      | 43   | 42   | 55   | 102  | 310   | 280   | 107  | 23    | 11     | 11    |
| 13          | 55    | 47      | 50   | 43   | 55   | 148  | 202   | 258   | 95   | 28    | 9.9    | 9.8   |
| 14          | 58    | 53      | 56   | 42   | 53   | 200  | 186   | 238   | 82   | 23    | 9.8    | 9.9   |
| 15          | 55    | 57      | 57   | 40   | 50   | 105  | 437   | 228   | 70   | 19    | 11     | 10    |
| 16          | 51    | 61      | 57   | 39   | 47   | 80   | 757   | 233   | 72   | 16    | 24     | 10    |
| 17          | 50    | 60      | 54   | 38   | 48   | 68   | 710   | 231   | 65   | 16    | 23     | 12    |
| 18          | 50    | 63      | 51   | 38   | 46   | 65   | 583   | 234   | 59   | 17    | 15     | 13    |
| 19          | 51    | 95      | 52   | 39   | 44   | 70   | 492   | 232   | 50   | 15    | 13     | 13    |
| 20          | 58    | 85      | 51   | 38   | 42   | 65   | 314   | 222   | 45   | 13    | 12     | 13    |
| 21          | 63    | 79      | 50   | 39   | 40   | 64   | 228   | 228   | 43   | 12    | 10     | 14    |
| 22          | 89    | 77      | 49   | 39   | 41   | 64   | 292   | 223   | 40   | 12    | 12     | 14    |
| 23          | 94    | 49      | 48   | 41   | 43   | 57   | 362   | 199   | 39   | 11    | 13     | 14    |
| 24          | 89    | 52      | 47   | 42   | 44   | 64   | 411   | 176   | 36   | 9.9   | 17     | 14    |
| 25          | 77    | 52      | 46   | 43   | 45   | 62   | 417   | 190   | 32   | 9.2   | 24     | 14    |
| 26          | 71    | 50      | 44   | 44   | 46   | 52   | 409   | 195   | 31   | 8.9   | 23     | 14    |
| 27          | 67    | 56      | 45   | 46   | 45   | 58   | 363   | 181   | 28   | 9.1   | 20     | 14    |
| 28          | 63    | 64      | 46   | 47   | 43   | 36   | 391   | 171   | 26   | 10    | 17     | 14    |
| 29          | 60    | 54      | 48   | 46   | ---  | 40   | 385   | 175   | 25   | 10    | 16     | 14    |
| 30          | 60    | 45      | 46   | 46   | ---  | 45   | 355   | 171   | 29   | 12    | 15     | 15    |
| 31          | 63    | ---     | 44   | 45   | ---  | 50   | ---   | 152   | ---  | 13    | 13     | ---   |
| TOTAL       | 2131  | 1721    | 1526 | 1308 | 1347 | 2971 | 11888 | 7021  | 2312 | 502.1 | 445.7  | 399.7 |
| MEAN        | 68.7  | 57.4    | 49.2 | 42.2 | 48.1 | 95.8 | 396   | 226   | 77.1 | 16.2  | 14.4   | 13.3  |
| MAX         | 119   | 95      | 58   | 47   | 55   | 270  | 757   | 352   | 145  | 31    | 24     | 20    |
| MIN         | 48    | 41      | 38   | 38   | 40   | 36   | 60    | 152   | 25   | 8.9   | 8.0    | 9.8   |
| AC-FT       | 4230  | 3410    | 3030 | 2590 | 2670 | 5890 | 23580 | 13930 | 4590 | 996   | 884    | 793   |
| CAL YR 1986 | TOTAL | 64067   |      | MEAN | 176  | MAX  | 1200  | MIN   | 21   | AC-FT | 127100 |       |
| WTR YR 1987 | TOTAL | 33572.5 |      | MEAN | 92.0 | MAX  | 757   | MIN   | 8.0  | AC-FT | 66590  |       |

09256000 SAVERY CREEK NEAR SAVERY, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1984 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | TUR-<br>BID-<br>ITY<br>(NTU) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------|----------------------------------------------|
| OCT<br>29... | 1020 | 62                                              | 405                                               | 8.4                            | 4.5                                  | 599                                                  | 45                           | 10.0                                | 99                                                             | K2                                                             | 200                                    | 60                                           |
| DEC<br>03... | 1200 | 64                                              | 510                                               | 8.0                            | 0.0                                  | 595                                                  | 12                           | 11.3                                | 99                                                             | K6                                                             | 240                                    | 72                                           |
| JAN<br>14... | 1600 | 42                                              | 450                                               | 7.8                            | 0.0                                  | 588                                                  | 5.2                          | 11.9                                | 106                                                            | K12                                                            | 210                                    | 64                                           |
| FEB<br>26... | 1100 | 46                                              | 480                                               | 7.6                            | 0.0                                  | 584                                                  | 7.6                          | 11.0                                | 98                                                             | K5                                                             | 220                                    | 65                                           |
| MAR<br>25... | 1530 | 73                                              | 410                                               | 7.8                            | 3.0                                  | 591                                                  | 40                           | 10.2                                | 98                                                             | <1                                                             | 200                                    | 62                                           |
| APR<br>21... | 1700 | 220                                             | 260                                               | 8.5                            | 9.0                                  | 600                                                  | 85                           | 9.1                                 | 100                                                            | K3                                                             | 130                                    | 40                                           |
| MAY<br>18... | 1530 | 223                                             | 170                                               | 7.8                            | 15.0                                 | 591                                                  | 19                           | 7.8                                 | 100                                                            | 20                                                             | 90                                     | 29                                           |
| JUN<br>09... | 1600 | 143                                             | 290                                               | 7.8                            | 17.0                                 | 595                                                  | --                           | 7.5                                 | 100                                                            | K1500                                                          | 130                                    | 41                                           |
| JUL<br>06... | 1630 | 17                                              | 360                                               | 7.8                            | 23.5                                 | 592                                                  | 2.5                          | 7.2                                 | 110                                                            | K140                                                           | 160                                    | 47                                           |
| AUG<br>17... | 1900 | 19                                              | 375                                               | 8.4                            | 18.5                                 | 596                                                  | 6.2                          | 6.8                                 | 93                                                             | 67                                                             | 170                                    | 54                                           |

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

| DATE         | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) |
|--------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|
| OCT<br>29... | 11                                                   | 9.6                                          | 0.3                                     | 1.9                                                 | 170                                             | 47                                            | 4.9                                                 | 0.3                                                | 21                                                | 276                                                                | 260                                                                 | 0.38                                                |
| DEC<br>03... | 14                                                   | 12                                           | 0.4                                     | 1.9                                                 | 190                                             | 62                                            | 4.7                                                 | 0.1                                                | 25                                                | 320                                                                | 310                                                                 | 0.44                                                |
| JAN<br>14... | 13                                                   | 11                                           | 0.3                                     | 2.5                                                 | 170                                             | 50                                            | 4.6                                                 | 0.3                                                | 23                                                | 292                                                                | 270                                                                 | 0.40                                                |
| FEB<br>26... | 13                                                   | 11                                           | 0.3                                     | 2.2                                                 | 180                                             | 54                                            | 4.6                                                 | 0.3                                                | 25                                                | 292                                                                | 280                                                                 | 0.40                                                |
| MAR<br>25... | 11                                                   | 9.8                                          | 0.3                                     | 2.5                                                 | 170                                             | 52                                            | 4.1                                                 | 0.2                                                | 24                                                | 284                                                                | 270                                                                 | 0.39                                                |
| APR<br>21... | 6.9                                                  | 5.2                                          | 0.2                                     | 1.7                                                 | 110                                             | 22                                            | 3.0                                                 | 0.2                                                | 17                                                | 180                                                                | 160                                                                 | 0.24                                                |
| MAY<br>18... | 4.3                                                  | 2.4                                          | 0.1                                     | 0.90                                                | 73                                              | 15                                            | 1.7                                                 | 0.1                                                | 13                                                | 132                                                                | 110                                                                 | 0.18                                                |
| JUN<br>09... | 7.4                                                  | 6.5                                          | 0.3                                     | 1.7                                                 | 110                                             | 30                                            | 3.2                                                 | 0.2                                                | 16                                                | 192                                                                | 170                                                                 | 0.26                                                |
| JUL<br>06... | 10                                                   | 9.6                                          | 0.3                                     | 3.0                                                 | 130                                             | 43                                            | 3.7                                                 | 0.2                                                | 13                                                | 224                                                                | 210                                                                 | 0.30                                                |
| AUG<br>17... | 8.6                                                  | 8.8                                          | 0.3                                     | 3.1                                                 | 140                                             | 45                                            | 3.5                                                 | 0.2                                                | 23                                                | 240                                                                | 230                                                                 | 0.33                                                |

09256000 SAVERY CREEK NEAR SAVERY, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDED<br>(T/DAY) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|--------------|---------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|-----------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------|
| OCT<br>29... | 46                                                | <0.1                                                 | <0.1                                                          | 0.03                                                 | 0.37                                                 | 0.4                                                                | 0.08                                        | <1                                                  | 261                                        | 44                                                             | --                                                            |
| DEC<br>03... | 55                                                | <0.1                                                 | <0.1                                                          | 0.03                                                 | 0.57                                                 | 0.6                                                                | 0.03                                        | --                                                  | 59                                         | 10                                                             | --                                                            |
| JAN<br>14... | 33                                                | 0.1                                                  | 0.1                                                           | 0.03                                                 | 0.27                                                 | 0.3                                                                | 0.04                                        | --                                                  | --                                         | --                                                             | --                                                            |
| FEB<br>26... | 36                                                | 0.1                                                  | 0.1                                                           | 0.04                                                 | 0.36                                                 | 0.4                                                                | 0.03                                        | --                                                  | 14                                         | 1.7                                                            | --                                                            |
| MAR<br>25... | 56                                                | <0.1                                                 | 0.1                                                           | 0.05                                                 | 0.65                                                 | 0.7                                                                | 0.08                                        | --                                                  | 50                                         | 9.9                                                            | --                                                            |
| APR<br>21... | 107                                               | <0.1                                                 | 0.1                                                           | 0.03                                                 | 0.77                                                 | 0.8                                                                | 0.06                                        | --                                                  | 175                                        | 104                                                            | 76                                                            |
| MAY<br>18... | 79                                                | <0.1                                                 | <0.1                                                          | <0.01                                                | --                                                   | 0.3                                                                | 0.03                                        | --                                                  | --                                         | --                                                             | --                                                            |
| JUN<br>09... | 74                                                | <0.1                                                 | <0.1                                                          | 0.04                                                 | 2.2                                                  | 2.2                                                                | 0.09                                        | --                                                  | 34                                         | 13                                                             | 96                                                            |
| JUL<br>06... | 10                                                | <0.1                                                 | <0.1                                                          | 0.08                                                 | 0.82                                                 | 0.9                                                                | 0.05                                        | <1                                                  | 4                                          | 0.18                                                           | --                                                            |
| AUG<br>17... | 12                                                | <0.1                                                 | <0.1                                                          | <0.01                                                | --                                                   | 0.7                                                                | 0.02                                        | --                                                  | 2                                          | 0.10                                                           | --                                                            |

## 09257000 LITTLE SNAKE RIVER NEAR DIXON, WY

LOCATION.--Lat 41°01'42", long 107°32'55", in SE1/4 NW1/4 sec.8, T.12 N., R.90 W., Carbon County, Hydrologic Unit 14050003, on left bank 200 ft upstream from highway bridge, 1,000 ft upstream from Willow Creek, and 0.8 mi west of Dixon.

DRAINAGE AREA.--988 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1910 to September 1923, March 1938 to current year (no winter records since 1971). Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1243: 1920(M). WDR WY-85-1: 1984(M).

GAGE.--Water-stage recorder. Datum of gage is 6,331.22 ft above National Geodetic Vertical Datum of 1929. May 27, 1910, to Sept. 30, 1923, nonrecording gage on highway bridge 200 ft downstream at datum 2.98 ft higher; Mar. 15, 1938, to Sept. 30, 1957, water-stage recorder at site 225 ft downstream at datum 2.98 ft higher; Oct. 1, 1957, to June 6, 1968, at site 850 ft downstream at present datum; and June 7 to Sept. 30, 1968, at site 225 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good except those for August and September, which are fair. Diversions for irrigation of about 9,500 acres upstream from station. One diversion upstream from station for irrigation of about 3,000 acres downstream. Transbasin diversions upstream from station.

AVERAGE DISCHARGE.--46 years (water years 1911-23, 1939-71), 514 ft<sup>3</sup>/s, 372,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft<sup>3</sup>/s, May 16, 1984, gage height, 13.56 ft, from floodmark, from rating curve extended above 10,000 ft<sup>3</sup>/s, some increase in peak due to dam failure; no flow Sept. 19, 20, 22, 1977, Aug. 7, 17, 18, 27-29, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date                                 | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|--------------------------------------|------|--------------------------------|------------------|
| Apr. 29 | 0530 | *2,520                         | *7.17            | No peak greater than base discharge. |      |                                |                  |

Minimum daily discharge during period of record, 0.05 ft<sup>3</sup>/s, Aug. 13, Sept. 24, 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV | DEC | JAN | FEB | MAR | APR   | MAY   | JUN    | JUL    | AUG   | SEP    |
|-------|-------|-----|-----|-----|-----|-----|-------|-------|--------|--------|-------|--------|
| 1     | 193   |     |     |     |     | --- | 336   | 2120  | 508    | 2.4    | .46   | .19    |
| 2     | 219   |     |     |     |     | --- | 467   | 2130  | 440    | 8.1    | .23   | .14    |
| 3     | 317   |     |     |     |     | --- | 482   | 1760  | 400    | 2.2    | .15   | .07    |
| 4     | 259   |     |     |     |     | --- | 879   | 1430  | 376    | 1.2    | .11   | .15    |
| 5     | 198   |     |     |     |     | --- | 1110  | 1310  | 340    | 1.1    | .10   | .25    |
| 6     | 188   |     |     |     |     | --- | 1170  | 1450  | 331    | 1.2    | .09   | .39    |
| 7     | 200   |     |     |     |     | --- | 1220  | 1480  | 327    | 1.2    | .09   | .28    |
| 8     | 212   |     |     |     |     | --- | 1070  | 1480  | 322    | 1.2    | .09   | .15    |
| 9     | 209   |     |     |     |     | --- | 1130  | 1440  | 367    | .89    | .08   | .21    |
| 10    | 206   |     |     |     |     | --- | 656   | 1500  | 515    | .78    | .07   | 26     |
| 11    | 206   |     |     |     |     | --- | 700   | 1500  | 355    | 2.0    | .06   | 20     |
| 12    | 136   |     |     |     |     | --- | 682   | 1630  | 274    | .68    | .06   | 20     |
| 13    | 162   |     |     |     |     | --- | 456   | 1760  | 229    | 49     | .05   | 25     |
| 14    | 168   |     |     |     |     | --- | 405   | 1650  | 177    | 26     | .10   | 19     |
| 15    | 162   |     |     |     |     | --- | 762   | 1570  | 137    | 13     | .19   | 1.9    |
| 16    | 152   |     |     |     |     | --- | 1490  | 1670  | 111    | 3.6    | .19   | .84    |
| 17    | 142   |     |     |     |     | --- | 1710  | 1630  | 70     | 2.6    | 1.3   | .39    |
| 18    | 151   |     |     |     |     | --- | 1810  | 1560  | 30     | 2.6    | .64   | .28    |
| 19    | 149   |     |     |     |     | --- | 2000  | 1540  | 28     | 2.6    | .21   | .25    |
| 20    | 170   |     |     |     |     | --- | 1480  | 1310  | 23     | 1.7    | .12   | .23    |
| 21    | 221   |     |     |     |     | --- | 919   | 1260  | 18     | 1.3    | .10   | .15    |
| 22    | 309   |     |     |     |     | --- | 1110  | 1170  | 17     | 1.3    | .10   | .10    |
| 23    | 289   |     |     |     |     | --- | 1490  | 989   | 10     | 1.4    | .15   | .07    |
| 24    | 269   |     |     |     |     | --- | 1900  | 921   | 5.6    | 1.3    | .46   | .05    |
| 25    | 243   |     |     |     |     | --- | 2040  | 905   | 2.5    | .95    | 3.3   | .08    |
| 26    | 219   |     |     |     |     | 137 | 2030  | 884   | 1.5    | .83    | 4.3   | .12    |
| 27    | 203   |     |     |     |     | 176 | 1880  | 821   | 1.2    | .89    | 3.2   | .08    |
| 28    | 200   |     |     |     |     | 125 | 2100  | 747   | 1.2    | 1.3    | 1.2   | .05    |
| 29    | 200   |     |     |     |     | 137 | 2200  | 689   | 1.2    | 1.2    | .59   | .11    |
| 30    | 191   |     |     |     |     | 117 | 2010  | 752   | 1.2    | .29    | .46   | .15    |
| 31    | 233   |     |     |     |     | 165 | ---   | 616   | ---    | .25    | .33   | ---    |
| TOTAL | 6376  |     |     |     |     | --- | 37694 | 41674 | 5419.4 | 135.06 | 18.58 | 116.68 |
| MEAN  | 206   |     |     |     |     | --- | 1256  | 1344  | 181    | 4.36   | .60   | 3.89   |
| MAX   | 317   |     |     |     |     | --- | 2200  | 2130  | 515    | 49     | 4.3   | 26     |
| MIN   | 136   |     |     |     |     | --- | 336   | 616   | 1.2    | .25    | .05   | .05    |
| AC-FT | 12650 |     |     |     |     | --- | 74770 | 82660 | 10750  | 268    | 37    | 231    |



09258000 WILLOW CREEK NEAR DIXON, WY

LOCATION.--Lat 40°54'56", long 107°31'16", on line between secs. 8 and 17, T.11 N., R.90 W., Moffat County, Co., Hydrologic Unit 14050003, on right bank 6.2 mi south of Colorado-Wyoming State line, 8.0 mi upstream from mouth, and 8.3 mi south of Dixon.

DRAINAGE AREA.--24 mi<sup>2</sup>, approximately.

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

GAGE.--Water-stage recorder. Elevation of gage is 6,700 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1-17, and Nov. 8 to Apr. 7. Records fair except for estimated daily discharges, which are poor. One small ditch diverts water upstream from station for irrigation. Regulation by Elk Lake, capacity, 400 acre-ft.

AVERAGE DISCHARGE.--34 years, 10.8 ft<sup>3</sup>/s, 7,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 476 ft<sup>3</sup>/s, May 10, 1984, gage height, 6.02 ft, from rating curve extended above 160 ft<sup>3</sup>/s; maximum gage height, 7.08 ft, Apr. 18, 1984 (backwater from ice); no flow Sept. 17-19, 1955, many days July through September 1977, and Aug. 8-16, 1982.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 70 ft<sup>3</sup>/s, and maximum (\*):

| Date                                             | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                       | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------------------------------------------------|------|-----------------------------------|---------------------|--------------------------------------------|------|-----------------------------------|---------------------|
| Apr. 15                                          | 1900 | *230                              | *4.88               | No other peak greater than base discharge. |      |                                   |                     |
| Minimum daily, 0.10 ft <sup>3</sup> /s, July 10. |      |                                   |                     |                                            |      |                                   |                     |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN  | FEB   | MAR   | APR  | MAY  | JUN   | JUL   | AUG   | SEP  |
|-------|-------|-------|------|------|-------|-------|------|------|-------|-------|-------|------|
| 1     | 7.0   | 8.4   | 3.0  | 2.5  | 3.5   | 3.5   | 10   | 35   | 18    | 4.5   | .53   | 1.3  |
| 2     | 7.5   | 6.7   | 3.0  | 2.5  | 3.5   | 3.5   | 15   | 36   | 18    | 2.5   | .53   | 1.2  |
| 3     | 8.0   | 6.1   | 2.5  | 2.5  | 4.0   | 3.5   | 10   | 25   | 17    | 2.3   | .53   | 1.1  |
| 4     | 7.5   | 6.5   | 2.5  | 2.5  | 4.0   | 3.5   | 15   | 18   | 17    | 2.2   | .53   | 1.7  |
| 5     | 7.0   | 6.6   | 3.0  | 2.5  | 3.5   | 3.5   | 20   | 16   | 19    | 1.8   | .53   | 2.3  |
| 6     | 6.5   | 6.6   | 3.0  | 2.5  | 3.5   | 3.5   | 15   | 17   | 21    | .82   | .50   | 1.7  |
| 7     | 6.0   | 6.2   | 2.5  | 2.5  | 4.0   | 3.5   | 30   | 18   | 24    | .69   | .50   | 1.5  |
| 8     | 6.0   | 4.0   | 2.5  | 2.5  | 4.0   | 3.5   | 51   | 15   | 24    | .43   | .50   | 1.4  |
| 9     | 5.5   | 4.0   | 2.5  | 2.5  | 4.0   | 3.5   | 35   | 17   | 44    | .11   | 1.1   | 1.5  |
| 10    | 5.5   | 4.5   | 2.5  | 2.5  | 4.0   | 3.5   | 35   | 20   | 52    | .10   | .84   | 1.6  |
| 11    | 5.0   | 4.5   | 2.5  | 2.5  | 4.0   | 3.5   | 26   | 26   | 31    | 1.9   | 1.0   | 1.5  |
| 12    | 4.0   | 4.5   | 2.5  | 2.5  | 4.0   | 3.5   | 19   | 30   | 18    | 12    | 1.2   | 1.5  |
| 13    | 3.5   | 5.0   | 2.5  | 2.5  | 4.0   | 3.5   | 11   | 40   | 14    | 6.0   | 1.3   | 1.4  |
| 14    | 3.5   | 6.0   | 2.5  | 2.5  | 4.0   | 3.5   | 29   | 34   | 12    | 2.5   | 1.7   | 1.6  |
| 15    | 3.5   | 7.5   | 2.5  | 2.5  | 3.5   | 3.5   | 77   | 35   | 8.5   | 1.2   | 2.4   | 1.7  |
| 16    | 3.5   | 7.0   | 2.5  | 2.5  | 3.5   | 3.5   | 83   | 46   | 7.2   | .80   | 3.5   | 1.7  |
| 17    | 4.0   | 6.6   | 2.5  | 2.5  | 3.5   | 3.5   | 69   | 41   | 5.8   | 2.1   | 2.0   | 2.0  |
| 18    | 4.7   | 6.0   | 2.5  | 2.5  | 3.5   | 3.5   | 67   | 37   | 4.8   | 4.4   | 1.5   | 1.9  |
| 19    | 5.0   | 5.0   | 2.5  | 2.5  | 3.5   | 3.5   | 43   | 38   | 4.2   | .66   | 1.5   | 1.6  |
| 20    | 5.9   | 5.0   | 2.5  | 2.5  | 3.5   | 3.5   | 22   | 29   | 4.2   | .58   | 1.4   | 1.7  |
| 21    | 7.7   | 5.0   | 2.5  | 2.5  | 3.5   | 3.5   | 19   | 25   | 5.1   | .55   | 1.9   | 1.8  |
| 22    | 17    | 4.5   | 2.5  | 2.5  | 3.5   | 3.5   | 23   | 21   | 4.4   | .54   | 2.9   | 1.9  |
| 23    | 12    | 4.0   | 2.5  | 2.5  | 3.5   | 3.5   | 33   | 26   | 4.8   | .54   | 2.4   | 1.9  |
| 24    | 9.2   | 4.0   | 2.5  | 2.5  | 3.5   | 3.5   | 37   | 25   | 2.8   | .54   | 5.0   | 2.1  |
| 25    | 7.9   | 4.0   | 2.5  | 2.5  | 3.5   | 3.5   | 35   | 23   | 2.2   | .54   | 5.0   | 2.3  |
| 26    | 7.2   | 4.5   | 2.5  | 3.0  | 3.5   | 3.5   | 34   | 26   | 2.3   | .53   | 3.9   | 2.1  |
| 27    | 6.5   | 5.0   | 2.5  | 3.0  | 3.5   | 3.5   | 33   | 19   | 2.2   | .53   | 2.5   | 2.1  |
| 28    | 6.3   | 5.0   | 2.5  | 3.0  | 3.5   | 3.5   | 33   | 14   | 2.2   | .53   | 2.0   | 2.1  |
| 29    | 6.1   | 4.5   | 2.5  | 3.0  | ---   | 3.5   | 33   | 13   | 2.6   | .53   | 1.8   | 2.1  |
| 30    | 6.1   | 3.5   | 2.5  | 3.0  | ---   | 3.5   | 28   | 16   | 2.8   | .53   | 1.5   | 2.1  |
| 31    | 8.2   | ---   | 2.5  | 3.0  | ---   | 5.0   | ---  | 15   | ---   | .53   | 1.3   | ---  |
| TOTAL | 203.3 | 160.7 | 79.5 | 80.5 | 103.0 | 110.0 | 990  | 796  | 395.1 | 53.48 | 53.79 | 52.4 |
| MEAN  | 6.56  | 5.36  | 2.56 | 2.60 | 3.68  | 3.55  | 33.0 | 25.7 | 13.2  | 1.73  | 1.74  | 1.75 |
| MAX   | 17    | 8.4   | 3.0  | 3.0  | 4.0   | 5.0   | 83   | 46   | 52    | 12    | 5.0   | 2.3  |
| MIN   | 3.5   | 3.5   | 2.5  | 2.5  | 3.5   | 3.5   | 10   | 13   | 2.2   | .10   | .50   | 1.1  |
| AC-FT | 403   | 319   | 158  | 160  | 204   | 218   | 1960 | 1580 | 784   | 106   | 107   | 104  |

CAL YR 1986 TOTAL 5238.5 MEAN 14.4 MAX 116 MIN 1.8 AC-FT 10390  
WTR YR 1987 TOTAL 3077.75 MEAN 8.43 MAX 83 MIN .10 AC-FT 6100



09259050 LITTLE SNAKE RIVER BELOW BAGGS, WY

LOCATION.--Lat 41°01'43", long 107°41'14", in SE1/4 NW1/4 NW1/4 sec.7, T.12 N., R.92 W., Carbon County, Hydrologic Unit 14050003, 0.8 mi downstream from Ledford Slough, 1.5 mi southwest of Baggs, and 3.5 mi downstream from bridge on State Highway 789 in Baggs.

PERIOD OF RECORD.--Water years 1981 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>28... | 1800 | 241                                             | 435                                               | 8.3                            | 10.0                                 | 610                                                  | 9.7                                 |
| JAN<br>15... | 0930 | 160                                             | 415                                               | 7.7                            | 0.0                                  | 598                                                  | 11.3                                |
| APR<br>21... | 1245 | 1220                                            | 300                                               | 8.6                            | 5.5                                  | 610                                                  | 10.1                                |
| JUL<br>06... | 1200 | 2.3                                             | 390                                               | 8.3                            | 22.0                                 | 605                                                  | 9.2                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>28... | 108                                                            | <1                                                             | <0.1                                                 | 0.02                                                 | --                                                   | <0.2                                                               | 0.04                                        |
| JAN<br>15... | 99                                                             | 29                                                             | <0.1                                                 | 0.03                                                 | 0.47                                                 | 0.5                                                                | 0.03                                        |
| APR<br>21... | 100                                                            | K31                                                            | <0.1                                                 | 0.02                                                 | 0.98                                                 | 1.0                                                                | 0.07                                        |
| JUL<br>06... | 134                                                            | 100                                                            | <0.1                                                 | 0.09                                                 | 1.0                                                  | 1.1                                                                | 0.09                                        |

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

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUL<br>06... | 1200 | 2.3                                             | 22.0                                 | <0.01                                                           | 0.02                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>17... | 1000 | 1.2                                             | 16.0                                 | <0.01                                                           | 0.02                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |

## 10011500 BEAR RIVER NEAR UTAH-WYOMING STATE LINE

LOCATION.--Lat 40°57'55", long 110°51'10", in SE1/4 NW1/4 SE1/4 sec.30, T.3 N., R.10 E., Summit County, Utah, Hydrologic Unit 16010101, on left bank 400 ft downstream from West Fork and 2.8 mi upstream from Utah-Wyoming State line.

DRAINAGE AREA.--172 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1942 to current year.

REVISED RECORDS.--WRD UT-74-1: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 7,965 ft from river-profile map. Prior to Oct. 1, 1986 at datum 3.0 ft lower.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated slightly by Whitney Reservoir, total capacity, 4,700 acre-ft since 1966. Three diversions upstream from station for irrigation of about 265 acres upstream and 2,600 acres downstream from station.

AVERAGE DISCHARGE.--45 years, 198 ft<sup>3</sup>/s, 143,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,230 ft<sup>3</sup>/s, June 6, 1986, gage height, 4.05 ft; maximum gage height, 4.28 ft, June 19, 1983; minimum, 6.8 ft<sup>3</sup>/s, Apr. 12, 1984, result of upstream ice jam.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                       | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|--------------------------------------------|------|-----------------------------------|---------------------|
| May 16 | 2400 | *1,610                            | *6.11               | No other peak greater than base discharge. |      |                                   |                     |

Minimum daily discharge, 48 ft<sup>3</sup>/s, Feb. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL    | AUG  | SEP  |
|-------------|-------|--------|------|------|------|------|-------|-------|-------|--------|------|------|
| 1           | 89    | 93     | 66   | e57  | 57   | e58  | 58    | 671   | 401   | 221    | 133  | e96  |
| 2           | 98    | 86     | 80   | e56  | 57   | 59   | 59    | 629   | 381   | 207    | 115  | e100 |
| 3           | 97    | 91     | 79   | e56  | 57   | 58   | 61    | 444   | 424   | 198    | 108  | e106 |
| 4           | 89    | 86     | 79   | e58  | 56   | 57   | 67    | 411   | 524   | 183    | 102  | e103 |
| 5           | 92    | 87     | 78   | e58  | e49  | 59   | 65    | 453   | 609   | 160    | 98   | 94   |
| 6           | 90    | 90     | 78   | e60  | e50  | 60   | 69    | 552   | 619   | 148    | 99   | 88   |
| 7           | 93    | 81     | 76   | e60  | e49  | 60   | 68    | 650   | 687   | 140    | 100  | 86   |
| 8           | 93    | 73     | 74   | e60  | e49  | 59   | 73    | 709   | 746   | 130    | 97   | 85   |
| 9           | 92    | 87     | e63  | e58  | 57   | 58   | 72    | 741   | 652   | 124    | 92   | 85   |
| 10          | 91    | 86     | e62  | e58  | 57   | 58   | 73    | 768   | 589   | 122    | 90   | 85   |
| 11          | 94    | 86     | e62  | e58  | 57   | 58   | 74    | 796   | 592   | 136    | 91   | 83   |
| 12          | 82    | 88     | e62  | e60  | 57   | 60   | 71    | 859   | 612   | 112    | 88   | 81   |
| 13          | 86    | 86     | e63  | e60  | 57   | 62   | 68    | 969   | 600   | 118    | 87   | 81   |
| 14          | 89    | 83     | e64  | e61  | 57   | 60   | 77    | 1010  | 583   | 156    | 136  | 82   |
| 15          | 87    | 82     | e62  | e63  | e48  | 58   | 98    | 1050  | 539   | 152    | 143  | 83   |
| 16          | 86    | 82     | e62  | e61  | 58   | 59   | 127   | 1200  | 562   | 170    | 127  | 82   |
| 17          | 87    | 80     | e60  | e58  | 58   | 58   | 166   | 1280  | 477   | 241    | 99   | 80   |
| 18          | 98    | 83     | e60  | e61  | 58   | 58   | 217   | 1170  | 416   | 245    | 93   | 80   |
| 19          | 103   | 80     | e60  | e64  | 58   | 59   | 197   | 1010  | 376   | 209    | 89   | 78   |
| 20          | 101   | 83     | e58  | e68  | e50  | 59   | 156   | 797   | 355   | 201    | 88   | 78   |
| 21          | 100   | 84     | e57  | e71  | e50  | 57   | 159   | 663   | 320   | 256    | 95   | 76   |
| 22          | 100   | 80     | e59  | e72  | e52  | 70   | 206   | 561   | 318   | 264    | 122  | 74   |
| 23          | 103   | 81     | e60  | e73  | 61   | 62   | 286   | 473   | 297   | 203    | e103 | 74   |
| 24          | 97    | 81     | e60  | 69   | 58   | 60   | 379   | 433   | 274   | 160    | 134  | 74   |
| 25          | 96    | 80     | e60  | 62   | 60   | 56   | 420   | 408   | 263   | 145    | e151 | 73   |
| 26          | 94    | 66     | e60  | 58   | 69   | 55   | 417   | 389   | 251   | 138    | e155 | 73   |
| 27          | 98    | 82     | e60  | 56   | 64   | 56   | 437   | 346   | 239   | 165    | e150 | 64   |
| 28          | 98    | 81     | e60  | 56   | 68   | 56   | 492   | 314   | 238   | 137    | e130 | 62   |
| 29          | 94    | 79     | e60  | 62   | ---  | 56   | 566   | 302   | 268   | 142    | e110 | 62   |
| 30          | 97    | 76     | e58  | 58   | ---  | 57   | 637   | 293   | 240   | 136    | e97  | 61   |
| 31          | 93    | ---    | e58  | 57   | ---  | 59   | ---   | 306   | ---   | 165    | e95  | ---  |
| TOTAL       | 2907  | 2483   | 2000 | 1889 | 1578 | 1821 | 5915  | 20657 | 13452 | 5284   | 3417 | 2429 |
| MEAN        | 93.8  | 82.8   | 64.5 | 60.9 | 56.4 | 58.7 | 197   | 666   | 448   | 170    | 110  | 81.0 |
| MAX         | 103   | 93     | 80   | 73   | 69   | 70   | 637   | 1280  | 746   | 264    | 155  | 106  |
| MIN         | 82    | 66     | 57   | 56   | 48   | 55   | 58    | 293   | 238   | 112    | 87   | 61   |
| AC-FT       | 5770  | 4930   | 3970 | 3750 | 3130 | 3610 | 11730 | 40970 | 26680 | 10480  | 6780 | 4820 |
| CAL YR 1986 | TOTAL | 123284 | MEAN | 338  | MAX  | 2680 | MIN   | 30    | AC-FT | 244500 |      |      |
| WTR YR 1987 | TOTAL | 63832  | MEAN | 175  | MAX  | 1280 | MIN   | 48    | AC-FT | 126600 |      |      |

e Estimated

## 10015700 SULPHUR CREEK ABOVE RESERVOIR, NEAR EVANSTON, WY

LOCATION.--Lat 41°08'38", long 110°48'19", in NE1/4 SE1/4 SW1/4 sec.35, T.14 N., R.119 W., Uinta County, Hydrologic Unit 16010101, on right bank 1.2 mi downstream from La Chapelle Creek, 2 mi upstream from Sulphur Creek Dam, and 11.5 mi southeast of Evanston.

DRAINAGE AREA.--64.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1957 to current year. Monthly discharge only for October and November 1957, published in WSP 1734.

REVISED RECORDS.--WRD UT-74-1: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 7,180 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Several diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--30 years, 19.1 ft<sup>3</sup>/s, 13,840 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,400 ft<sup>3</sup>/s, June 1, 1983, gage height, 9.10 ft, from rating curve extended above 1,200 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Flood was result of released water from temporary blockage of upstream road culverts; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 229 ft<sup>3</sup>/s, Apr. 6, gage height, 4.17 ft; minimum daily, 0.15 ft<sup>3</sup>/s, Aug. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV   | DEC  | JAN   | FEB  | MAR  | APR  | MAY  | JUN   | JUL    | AUG   | SEP   |
|-------|-------|-------|------|-------|------|------|------|------|-------|--------|-------|-------|
| 1     | 10    | 10    | e10  | e12   | e11  | e14  | e82  | 87   | 16    | 7.5    | 2.5   | 1.4   |
| 2     | 13    | 9.4   | e11  | e13   | e12  | e15  | 89   | 97   | 15    | 5.4    | 2.3   | 1.1   |
| 3     | 17    | 11    | e11  | e14   | e13  | e16  | 98   | 69   | 13    | 5.4    | 1.6   | .95   |
| 4     | 13    | 11    | 12   | e15   | e11  | e17  | 108  | 62   | 12    | 5.2    | 1.3   | 2.0   |
| 5     | 11    | 13    | 12   | e15   | e11  | e18  | 132  | e53  | 16    | 4.2    | 1.0   | 1.8   |
| 6     | 10    | 13    | 12   | e13   | e11  | e19  | 143  | e60  | 23    | 3.6    | .74   | 1.4   |
| 7     | 9.7   | 12    | 12   | e12   | e12  | e21  | 117  | e67  | 31    | 3.2    | .35   | 1.4   |
| 8     | e8.8  | 11    | 14   | e10   | e12  | e22  | 98   | e77  | 43    | e1.0   | .21   | 1.4   |
| 9     | e7.6  | 11    | 12   | e8.6  | e12  | e26  | 87   | e80  | 40    | .86    | .16   | 1.3   |
| 10    | 7.1   | 12    | 11   | e8.2  | e12  | e29  | 86   | e82  | 54    | .95    | .15   | 1.1   |
| 11    | 7.1   | 12    | e11  | e8.0  | e13  | e30  | 85   | e83  | 27    | 2.3    | .26   | .90   |
| 12    | 7.4   | 12    | e11  | e9.4  | e14  | e31  | 85   | e84  | 21    | 2.4    | 1.1   | 1.0   |
| 13    | 7.9   | 13    | e11  | e9.6  | e14  | e33  | 85   | e86  | 17    | 1.9    | .52   | 1.1   |
| 14    | 7.9   | 13    | e12  | e11   | e13  | e36  | 85   | e90  | 15    | 1.5    | .31   | 1.1   |
| 15    | 7.1   | 15    | e12  | e11   | e12  | e37  | 84   | e96  | 12    | 1.6    | 3.2   | 1.5   |
| 16    | 8.2   | 18    | e12  | e11   | e11  | e39  | 84   | e102 | 16    | 1.5    | 2.5   | 1.8   |
| 17    | 8.2   | 16    | e12  | e11   | e11  | e40  | 76   | e111 | 14    | 3.5    | 1.1   | 1.8   |
| 18    | 11    | 21    | e12  | e10   | e11  | e41  | 66   | e121 | 10    | 5.6    | .95   | 1.6   |
| 19    | 16    | 21    | e13  | e10   | e11  | e44  | 67   | e109 | 8.2   | 6.0    | .46   | 1.4   |
| 20    | 23    | 22    | e12  | e11   | e12  | e48  | 56   | e95  | 7.7   | 5.8    | .19   | 1.3   |
| 21    | 15    | 21    | e11  | e11   | e12  | e49  | 56   | e78  | 6.8   | 16     | .22   | 1.3   |
| 22    | 13    | 19    | e11  | e11   | e13  | e51  | 56   | 62   | 5.3   | 38     | 1.4   | 1.2   |
| 23    | 13    | 15    | e11  | e11   | e13  | e53  | 57   | 34   | 5.0   | 13     | 1.4   | 1.0   |
| 24    | 12    | 13    | e11  | e12   | e12  | e56  | 70   | 29   | 5.5   | 8.9    | 1.7   | 1.4   |
| 25    | 11    | e12   | e11  | e12   | e12  | e58  | 75   | 30   | 6.4   | 8.2    | 2.9   | 2.5   |
| 26    | 10    | e12   | e11  | e13   | e13  | e62  | 70   | 37   | 5.9   | 9.3    | 2.3   | 2.5   |
| 27    | 9.7   | e11   | e11  | e13   | e13  | e66  | 71   | 36   | 5.3   | 7.8    | 1.8   | 2.2   |
| 28    | 9.1   | e11   | e13  | e13   | e13  | e70  | 74   | 29   | 5.3   | 6.2    | 1.7   | 1.6   |
| 29    | 9.1   | 11    | e13  | e13   | ---  | e74  | 77   | 43   | 14    | 3.7    | 1.6   | 1.4   |
| 30    | 7.6   | e10   | e11  | e12   | ---  | e75  | 76   | 37   | 12    | 3.2    | 1.5   | 1.3   |
| 31    | 8.8   | ---   | e11  | e11   | ---  | e77  | ---  | 22   | ---   | 2.6    | 1.4   | ---   |
| TOTAL | 329.3 | 411.4 | 360  | 354.8 | 340  | 1267 | 2495 | 2148 | 482.4 | 186.31 | 38.82 | 43.75 |
| MEAN  | 10.6  | 13.7  | 11.6 | 11.4  | 12.1 | 40.9 | 83.2 | 69.3 | 16.1  | 6.01   | 1.25  | 1.46  |
| MAX   | 23    | 22    | 14   | 15    | 14   | 77   | 143  | 121  | 54    | 38     | 3.2   | 2.5   |
| MIN   | 7.1   | 9.4   | 10   | 8.0   | 11   | 14   | 56   | 22   | 5.0   | .86    | .15   | .90   |
| AC-FT | 653   | 816   | 714  | 704   | 674  | 2510 | 4950 | 4260 | 957   | 370    | 77    | 87    |

CAL YR 1986 TOTAL 14097.75 MEAN 38.6 MAX 355 MIN 2.1 AC-FT 27960  
WTR YR 1987 TOTAL 8456.70 MEAN 23.2 MAX 143 MIN .15 AC-FT 16770

e Estimated

## 10015900 SULPHUR CREEK BELOW RESERVOIR, NEAR EVANSTON, WY

LOCATION.--Lat 41°09'21", long 110°50'05", in SE1/4 SE1/4 SE1/4 sec.28, T.14 N., R.119 W., Uinta County, Hydrologic Unit 16010101, on left bank 400 ft downstream from Sulphur Creek Dam, 6.3 mi upstream from mouth, and 10.5 mi southeast of Evanston.

DRAINAGE AREA.--69.2 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1958 to current year.

REVISED RECORDS.--WRD UT-74-1: Drainage area.

GAGE.--Water-stage recorder and concrete V-notch control. Altitude of gage is 7,120 ft, from topographic map. Oct. 1, 1986 to June 9, 1987 at datum 1.0 ft higher. After June 9, 1987 at site 0.3 mi downstream at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated by Sulphur Creek Reservoir, capacity, 7,100 acre-ft. Records prior to 1965 do not include flow over spillway of the dam.

AVERAGE DISCHARGE.--23 years (water years 1965-87), 27.7 ft<sup>3</sup>/s, 20,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (SINCE 1966).--Maximum daily discharge, 740 ft<sup>3</sup>/s, May 15, 1984; no flow at times each year, except 1972.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 165 ft<sup>3</sup>/s, May 26; no flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT    | NOV | DEC    | JAN   | FEB    | MAR  | APR     | MAY     | JUN     | JUL  | AUG  | SEP     |
|-------|--------|-----|--------|-------|--------|------|---------|---------|---------|------|------|---------|
| 1     | .00    | .00 | .00    | e20   | e5.0   | e.00 | .12     | 69      | 5.0     | 44   | 44   | e88     |
| 2     | .00    | .00 | .00    | e19   | e5.0   | e.00 | .10     | 70      | 19      | 48   | 44   | 92      |
| 3     | .00    | .00 | .00    | e18   | e5.4   | e.00 | .10     | 71      | 19      | 46   | 46   | 119     |
| 4     | 18     | .00 | .00    | e18   | e5.4   | e.00 | .11     | 70      | 19      | 49   | 45   | 111     |
| 5     | 35     | .00 | 8.7    | e18   | e5.0   | e.00 | .13     | 69      | 13      | 49   | 45   | 113     |
| 6     | 35     | .00 | e12    | e18   | e5.0   | e.00 | 1.4     | 69      | .00     | 49   | 45   | 95      |
| 7     | 35     | .00 | e13    | e17   | e5.2   | e.00 | 126     | 69      | .00     | 50   | 45   | 63      |
| 8     | 35     | .00 | e13    | e16   | e5.2   | e.00 | 138     | 69      | 8.7     | 51   | 45   | 62      |
| 9     | 35     | .00 | e13    | e16   | e5.2   | e.00 | 147     | 68      | e63     | 51   | 44   | 76      |
| 10    | 35     | .00 | e13    | e16   | e5.2   | e.00 | 149     | 68      | 70      | 51   | 44   | 100     |
| 11    | 34     | .00 | e13    | e16   | e5.4   | .00  | 147     | 68      | 74      | 50   | 42   | 94      |
| 12    | 34     | .00 | e13    | e16   | e5.4   | .00  | 146     | 68      | 66      | 50   | 41   | 68      |
| 13    | 34     | .00 | e13    | e18   | e5.6   | .00  | 145     | 65      | 56      | 50   | 43   | 12      |
| 14    | 34     | .00 | e14    | e18   | e5.6   | .00  | 107     | 60      | 49      | 50   | 52   | .1      |
| 15    | 34     | .00 | e20    | e16   | e5.0   | .00  | 66      | 46      | e51     | 51   | 52   | .00     |
| 16    | 34     | .00 | e25    | e5.2  | e4.8   | .00  | 66      | 13      | e51     | 51   | 52   | .00     |
| 17    | 34     | .00 | e30    | e5.2  | e4.8   | .00  | 34      | 13      | e51     | 51   | 54   | .00     |
| 18    | 34     | .00 | e30    | e5.2  | e4.8   | .00  | 12      | 13      | e50     | 50   | 52   | .00     |
| 19    | 34     | .00 | e30    | e5.4  | e5.2   | .00  | 12      | 5.2     | e45     | 45   | 52   | .00     |
| 20    | 34     | .00 | e30    | e5.2  | e5.2   | .00  | 11      | .09     | e45     | 45   | 52   | .00     |
| 21    | 34     | .00 | e28    | e5.2  | e5.2   | .00  | 11      | .05     | e45     | 45   | 51   | .00     |
| 22    | 34     | .00 | e28    | e5.2  | e5.0   | .00  | 11      | .02     | e42     | 46   | 57   | .00     |
| 23    | 34     | .00 | e28    | e5.2  | e5.0   | .00  | 12      | 19      | e42     | 46   | 77   | .14     |
| 24    | 34     | .00 | e26    | e5.4  | e5.4   | .00  | 13      | 32      | e40     | 46   | 85   | e.00    |
| 25    | 33     | .00 | e26    | e5.4  | e5.4   | .01  | 14      | 84      | e40     | 48   | 84   | e.00    |
| 26    | 33     | .00 | e25    | e5.4  | e5.2   | .12  | 27      | 165     | e39     | 48   | 84   | e.00    |
| 27    | 33     | .00 | e24    | e5.6  | e5.2   | .12  | 68      | 59      | e38     | 49   | e84  | e.00    |
| 28    | 17     | .00 | e23    | e5.6  | e.00   | .12  | 69      | .00     | e37     | 50   | e84  | e.00    |
| 29    | .08    | .00 | e23    | e5.4  | ---    | .12  | 68      | .00     | 35      | 49   | e84  | e.00    |
| 30    | .05    | .00 | e21    | e5.2  | ---    | .12  | 69      | .00     | 35      | 50   | e84  | e.00    |
| 31    | .01    | --- | e20    | e5.0  | ---    | .12  | ---     | .00     | ---     | 49   | e84  | ---     |
| TOTAL | 820.14 | .00 | 562.70 | 344.8 | 139.80 | .73  | 1669.96 | 1402.36 | 1147.70 | 1507 | 1797 | 1093.24 |
| MEAN  | 26.5   | .00 | 18.2   | 11.1  | 4.99   | .02  | 55.7    | 45.2    | 38.3    | 48.6 | 58.0 | 36.4    |
| MAX   | 35     | .00 | 30     | 20    | 5.6    | .12  | 149     | 165     | 74      | 51   | 85   | 119     |
| MIN   | .00    | .00 | .00    | 5.0   | .00    | .00  | .10     | .00     | .00     | 44   | 41   | .00     |
| AC-FT | 1630   | .0  | 1120   | 684   | 277    | 1.4  | 3310    | 2780    | 2280    | 2990 | 3560 | 2170    |

CAL YR 1986 TOTAL 16795.44 MEAN 46.0 MAX 245 MIN .00 AC-FT 33310  
WTR YR 1987 TOTAL 10485.42 MEAN 28.7 MAX 165 MIN .00 AC-FT 20800

e Estimated

## BEAR RIVER BASIN

10016900 BEAR RIVER AT EVANSTON, WY

LOCATION.--Lat 41°16'13", long 110°57'47", in NE1/4 NW1/4 NW1/4 sec.21, T.15 N., R.120 W., Uinta County, Hydrologic Unit 16010101, on left bank 100 ft downstream from bridge on State Highway 89, in the City of Evanston.

DRAINAGE AREA.--433 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1984 to current year (no winter records).

GAGE.--Water-stage recorder. Elevation of gage is 6,730 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: May 13-18, and Sept. 10-29. Records good except those for estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs, diversions for irrigation, and return flow from irrigated areas. Results of discharge measurements, in cubic feet per second, made during the period when station was not in operation, are given below:

Oct. 3 . . 173

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,680 ft<sup>3</sup>/s, May 16, 1984, gage height, 7.35 ft; minimum daily during periods of operation, 31 ft<sup>3</sup>/s, July 16, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,520 ft<sup>3</sup>/s, May 17, gage height, 4.82 ft, from floodmark; minimum daily during period of operation, 31 ft<sup>3</sup>/s, July 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR   | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|-------|-------|-------|------|------|------|
| 1     |     |     |     |     |     |     | 168   | 900   | 318   | 98   | 99   | 100  |
| 2     |     |     |     |     |     |     | 222   | 909   | 313   | 94   | 83   | 101  |
| 3     |     |     |     |     |     |     | 263   | 702   | 301   | 73   | 67   | 123  |
| 4     |     |     |     |     |     |     | 366   | 637   | 330   | 71   | 56   | 143  |
| 5     |     |     |     |     |     |     | 378   | 616   | 384   | 62   | 44   | 147  |
| 6     |     |     |     |     |     |     | 480   | 686   | 424   | 58   | 35   | 132  |
| 7     |     |     |     |     |     |     | 479   | 790   | 472   | 51   | 34   | 90   |
| 8     |     |     |     |     |     |     | 441   | 863   | 667   | 51   | 38   | 95   |
| 9     |     |     |     |     |     |     | 405   | 891   | 613   | 45   | 33   | 99   |
| 10    |     |     |     |     |     |     | 352   | 863   | 594   | 39   | 34   | 95   |
| 11    |     |     |     |     |     |     | 367   | 909   | 542   | 48   | 38   | 90   |
| 12    |     |     |     |     |     |     | 341   | 946   | 500   | 44   | 39   | 90   |
| 13    |     |     |     |     |     |     | 298   | 1000  | 456   | 41   | 34   | 90   |
| 14    |     |     |     |     |     |     | 289   | 1050  | 435   | 37   | 50   | 90   |
| 15    |     |     |     |     |     |     | 282   | 1150  | 381   | 33   | 113  | 90   |
| 16    |     |     |     |     |     |     | 335   | 1250  | 406   | 31   | 128  | 90   |
| 17    |     |     |     |     |     |     | 360   | 1350  | 346   | 32   | 101  | 90   |
| 18    |     |     |     |     |     |     | 389   | 1250  | 295   | 54   | 82   | 90   |
| 19    |     |     |     |     |     |     | 435   | 1150  | 258   | 50   | 74   | 90   |
| 20    |     |     |     |     |     |     | 316   | 981   | 231   | 43   | 70   | 90   |
| 21    |     |     |     |     |     |     | 287   | 832   | 197   | 52   | 72   | 95   |
| 22    |     |     |     |     |     |     | 326   | 671   | 155   | 172  | 97   | 100  |
| 23    |     |     |     |     |     |     | 399   | 544   | 149   | 125  | 101  | 100  |
| 24    |     |     |     |     |     |     | 517   | 492   | 125   | 87   | 107  | 80   |
| 25    |     |     |     |     |     |     | 586   | 470   | 96    | 68   | 157  | 70   |
| 26    |     |     |     |     |     |     | 579   | 600   | 70    | 59   | 143  | 60   |
| 27    |     |     |     |     |     |     | 601   | 546   | 53    | 52   | 123  | 50   |
| 28    |     |     |     |     |     |     | 679   | 361   | 59    | 78   | 127  | 40   |
| 29    |     |     |     |     |     |     | 737   | 342   | 79    | 91   | 121  | 35   |
| 30    |     |     |     |     |     |     | 828   | 347   | 113   | 100  | 112  | 32   |
| 31    |     |     |     |     |     |     | ---   | 298   | ---   | 107  | 109  | ---  |
| TOTAL |     |     |     |     |     |     | 12505 | 24396 | 9362  | 2046 | 2521 | 2687 |
| MEAN  |     |     |     |     |     |     | 417   | 787   | 312   | 66.0 | 81.3 | 89.6 |
| MAX   |     |     |     |     |     |     | 828   | 1350  | 667   | 172  | 157  | 147  |
| MIN   |     |     |     |     |     |     | 168   | 298   | 53    | 31   | 33   | 32   |
| AC-FT |     |     |     |     |     |     | 24800 | 48390 | 18570 | 4060 | 5000 | 5330 |

10018900 YELLOW CREEK AT MOUTH, NEAR EVANSTON, WY

LOCATION.--Lat 41°18'33", long 111°00'43", in SW1/4 NE1/4 sec.1, T.15 N., R.121 W., Uinta County, Hydrologic Unit 16010101, approximately 1,000 ft upstream from mouth and 4 mi northeast of Evanston.

PERIOD OF RECORD.--Water years 1985 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>30... | 1600 | 30                                              | 850                                               | 8.5                            | 6.0                                  | 605                                                  | 9.8                                 |
| JAN<br>08... | 0830 | 17                                              | 830                                               | 8.2                            | 0.0                                  | 605                                                  | 11.2                                |
| APR<br>22... | 1330 | 53                                              | 780                                               | 8.4                            | 12.0                                 | 600                                                  | 11.0                                |
| AUG<br>19... | 1400 | 5.5                                             | 760                                               | 8.4                            | 18.0                                 | 630                                                  | 8.8                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>30... | 100                                                            | 52                                                             | 0.6                                                  | 0.04                                                 | 0.46                                                 | 0.5                                                                | 0.57                                        |
| JAN<br>08... | 97                                                             | K9                                                             | 1.4                                                  | 0.06                                                 | 0.94                                                 | 1.0                                                                | 0.62                                        |
| APR<br>22... | 130                                                            | 31                                                             | 0.7                                                  | 0.03                                                 | 0.87                                                 | 0.9                                                                | 0.53                                        |
| AUG<br>19... | 113                                                            | 86                                                             | <0.1                                                 | 0.02                                                 | 0.58                                                 | 0.6                                                                | 0.27                                        |

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



## 10020100 BEAR RIVER ABOVE RESERVOIR, NEAR WOODRUFF, UT

LOCATION.--Lat 41°26'04", long 111°01'01", in NE1/4 NW1/4 NW1/4 sec.29, T.17 N., R.120 W., Uinta County, Wyoming, Hydrologic Unit 16010101, on right bank 9.3 mi upstream from Woodruff Narrows Dam and 10 mi southeast of Woodruff.

DRAINAGE AREA.--752 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WRD UT-74-1: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 6,455 ft, from river-profile map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Diversion for irrigation of about 43,500 acres upstream from station.

AVERAGE DISCHARGE.--26 years, 265 ft<sup>3</sup>/s, 192,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,150 ft<sup>3</sup>/s, June 2, 1983, gage height, 6.17 ft; minimum, 0.1 ft<sup>3</sup>/s, Aug. 24, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,360 ft<sup>3</sup>/s, May 17, gage height, 4.18 ft; minimum daily, 19 ft<sup>3</sup>/s, Sept. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR   | APR   | MAY   | JUN   | JUL    | AUG  | SEP  |
|-------------|-------|--------|------|------|------|-------|-------|-------|-------|--------|------|------|
| 1           | 162   | 151    | 101  | e93  | e78  | e88   | 59    | 846   | 245   | 78     | 68   | 75   |
| 2           | 167   | 151    | 112  | e88  | e87  | e94   | 75    | 907   | 247   | 68     | 57   | 65   |
| 3           | 187   | 138    | e134 | e89  | e98  | e125  | 78    | 803   | 232   | 56     | 49   | 67   |
| 4           | 184   | 141    | e150 | e91  | e94  | e150  | 127   | 634   | 228   | 46     | 43   | 93   |
| 5           | 179   | 134    | e168 | e102 | e85  | e200  | 349   | 590   | 252   | 37     | 33   | 103  |
| 6           | 184   | 139    | e155 | e120 | e82  | e260  | 434   | 627   | 293   | 31     | 27   | 97   |
| 7           | 180   | 150    | e140 | e102 | e82  | e310  | 492   | 679   | 335   | 26     | 24   | 75   |
| 8           | 175   | 128    | e125 | e99  | e85  | e365  | 466   | 745   | 498   | 22     | 21   | 43   |
| 9           | 166   | 113    | 112  | e95  | e88  | e345  | 428   | 792   | 501   | 27     | 24   | 37   |
| 10          | 159   | 126    | 94   | e91  | e92  | e310  | 393   | 769   | 484   | 30     | 22   | 44   |
| 11          | 158   | 158    | 118  | e89  | e96  | e290  | 372   | 804   | 447   | 31     | 23   | 55   |
| 12          | 162   | 146    | 124  | e88  | e112 | e280  | 374   | 826   | 397   | 27     | 25   | 57   |
| 13          | 151   | 144    | 110  | e85  | e142 | e290  | 326   | 878   | 354   | 26     | 27   | 46   |
| 14          | 157   | 127    | 119  | e84  | e158 | e310  | 283   | 965   | 333   | 23     | 23   | 33   |
| 15          | 158   | 129    | 119  | e79  | e150 | e330  | 268   | 976   | 309   | 23     | 50   | 24   |
| 16          | 115   | 122    | e121 | e71  | e138 | e270  | 285   | 1020  | 302   | 23     | 68   | 23   |
| 17          | 109   | 125    | e108 | e76  | e113 | e230  | 328   | 1110  | 279   | 24     | 75   | 21   |
| 18          | 110   | 116    | e106 | e78  | e110 | e185  | 320   | 1220  | 241   | 21     | 59   | 21   |
| 19          | 144   | 125    | e105 | e84  | e110 | e155  | 366   | 1060  | 220   | 30     | 55   | 20   |
| 20          | 174   | 143    | e103 | e75  | e109 | e118  | 332   | 949   | 206   | 30     | 51   | 19   |
| 21          | 171   | 131    | e101 | e69  | e125 | e100  | 280   | 782   | 192   | 29     | 44   | 21   |
| 22          | 166   | 140    | e96  | e65  | e130 | e88   | 275   | 641   | 168   | 56     | 49   | 29   |
| 23          | 162   | 125    | e94  | e60  | e140 | e76   | 325   | 507   | 141   | 96     | 62   | 28   |
| 24          | 156   | 114    | e102 | e72  | e115 | e82   | 422   | 438   | 130   | 64     | 70   | 26   |
| 25          | 145   | 131    | e110 | e80  | e88  | e85   | 508   | 383   | 110   | 51     | 86   | 23   |
| 26          | 139   | 121    | e100 | e100 | e82  | e84   | 590   | 504   | 98    | 43     | 103  | 21   |
| 27          | 160   | 96     | e94  | e87  | e80  | 77    | 589   | 561   | 77    | 41     | 101  | 21   |
| 28          | 169   | 115    | e92  | e77  | e82  | 72    | 641   | 324   | 54    | 43     | 89   | 22   |
| 29          | 161   | 119    | e98  | e71  | ---  | 59    | 675   | 295   | 60    | 55     | 89   | 27   |
| 30          | 146   | 118    | e103 | e72  | ---  | 62    | 729   | 303   | 65    | 61     | 82   | 24   |
| 31          | 150   | ---    | e103 | e74  | ---  | 71    | ---   | 266   | ---   | 66     | 77   | ---  |
| TOTAL       | 4906  | 3916   | 3517 | 2606 | 2951 | 5561  | 11189 | 22204 | 7498  | 1284   | 1676 | 1260 |
| MEAN        | 158   | 131    | 113  | 84.1 | 105  | 179   | 373   | 716   | 250   | 41.4   | 54.1 | 42.0 |
| MAX         | 187   | 158    | 168  | 120  | 158  | 365   | 729   | 1220  | 501   | 96     | 103  | 103  |
| MIN         | 109   | 96     | 92   | 60   | 78   | 59    | 59    | 266   | 54    | 21     | 21   | 19   |
| AC-FT       | 9730  | 7770   | 6980 | 5170 | 5850 | 11030 | 22190 | 44040 | 14870 | 2550   | 3320 | 2500 |
| CAL YR 1986 | TOTAL | 215789 | MEAN | 591  | MAX  | 3760  | MIN   | 49    | AC-FT | 428000 |      |      |
| WTR YR 1987 | TOTAL | 68568  | MEAN | 188  | MAX  | 1220  | MIN   | 19    | AC-FT | 136000 |      |      |

e Estimated

10020100 BEAR RIVER ABOVE RESERVOIR, NEAR WOODRUFF, UT--Continued

## WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------|
| OCT<br>30... | 1300 | 56                                              | 480                                               | 8.4                            | 6.0                                  | 605                                                  | 10.1                                |
| JAN<br>08... | 1130 | 46                                              | 580                                               | 8.0                            | 0.0                                  | 605                                                  | 11.3                                |
| APR<br>23... | 0830 | 290                                             | 390                                               | 8.4                            | 10.0                                 | 604                                                  | 8.8                                 |
| JUL<br>08... | 1430 | 27                                              | 520                                               | 8.1                            | 21.0                                 | 605                                                  | 9.2                                 |

| DATE         | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|
| OCT<br>30... | 103                                                            | 35                                                             | <0.1                                                 | 0.03                                                 | 0.37                                                 | 0.4                                                                | 0.08                                        |
| JAN<br>08... | 98                                                             | K8                                                             | 0.4                                                  | 0.07                                                 | 0.53                                                 | 0.6                                                                | 0.09                                        |
| APR<br>23... | 99                                                             | K16                                                            | <0.1                                                 | 0.02                                                 | 0.58                                                 | 0.6                                                                | 0.11                                        |
| JUL<br>08... | 131                                                            | 48                                                             | <0.1                                                 | 0.02                                                 | 1.2                                                  | 1.2                                                                | 0.03                                        |

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

## BEAR RIVER BASIN

## 10020200 WOODRUFF NARROWS RESERVOIR NEAR WOODRUFF, UT

LOCATION.--Lat 41°30'10", long 111°00'55", in SE1/4 NW1/4 sec.32, T.18 N., R.120 W., Uinta County, Wyoming, Hydrologic Unit 16010101, in gate house at Woodruff Narrows Dam on Bear River, 5.6 mi upstream from Wyoming-Utah State line, and 7.7 mi east of Woodruff.

DRAINAGE AREA.--784 mi<sup>2</sup>.

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

REVISED RECORDS.--WRD UT-74-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,405 ft, from levels by Bureau of Reclamation.

REMARKS.--Records poor. Reservoir formed by earthfill, rock-faced dam. Storage began Jan. 5, 1962. Total capacity, 28,000 acre-ft below spillway crest. Total capacity increased to 57,300 in 1980. Gage height of spillway is 50.4 ft. Figures given herein represent total contents.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 64,310 acre-ft, June 2, 1983, gage height, 53.5 ft; minimum observed, 880 acre-ft, Sept. 15-25, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum, 60,470 acre-ft, May 18, 19, gage height, 51.8 ft; minimum, 22,380 acre-ft, Sept. 28-30, gage height, 31.5 ft.

## MONTHEND ELEVATION, IN FEET, AND INSTANTANEOUS CONTENTS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| Date                  | Elevation<br>(feet) | Contents<br>(acre-feet) | Change in contents<br>(acre-feet) |
|-----------------------|---------------------|-------------------------|-----------------------------------|
| Sept. 30 . . . . .    | -                   | *48,480                 | -                                 |
| Oct. 31 . . . . .     | -                   | *55,720                 | +7,240                            |
| Nov. 30 . . . . .     | -                   | *57,980                 | +2,260                            |
| Dec. 31 . . . . .     | -                   | *57,980                 | 0                                 |
| CAL YR 1986 . . . . . | -                   | -                       | +27,450                           |
| Jan. 31 . . . . .     | -                   | *57,980                 | 0                                 |
| Feb. 28 . . . . .     | -                   | *57,980                 | 0                                 |
| Mar. 31 . . . . .     | -                   | *57,530                 | -450                              |
| Apr. 30 . . . . .     | 51.4                | 59,560                  | +2,030                            |
| May 31 . . . . .      | 51.0                | 58,660                  | -900                              |
| June 30 . . . . .     | 38.4                | 33,430                  | -25,230                           |
| July 31 . . . . .     | 32.0                | 23,080                  | -10,350                           |
| Aug. 31 . . . . .     | 31.8                | 22,800                  | -280                              |
| Sept. 30 . . . . .    | 31.5                | 22,380                  | -420                              |
| WTR YR 1987 . . . . . | -                   | -                       | -26,100                           |

\* No gage reading, contents interpolated.

## 10020300 BEAR RIVER BELOW RESERVOIR, NEAR WOODRUFF, UT

LOCATION.--Lat 41°30'20", long 111°00'50", in NW1/4 NW1/4 sec.32, T.18 N., R.120 W., Uinta County, Wyoming, Hydrologic Unit 16010101, on right bank 1,100 ft downstream from Woodruff Narrows Dam, 1.6 mi upstream from Salt Creek, 5.4 mi upstream from Wyoming-Utah State line, and 7.7 mi east of Woodruff.

DRAINAGE AREA.--784 mi<sup>2</sup>.

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

REVISED RECORDS.--WRD UT-74-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 6,398.96 ft NGVD of 1929 (levels by Utah Water Resources Division from Bureau of Reclamation bench mark). Prior to Sept. 26, 1962, at site 175 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Woodruff Narrows Reservoir (station 10020200) beginning January 1962. Diversions for irrigation of about 43,500 acres upstream from station.

AVERAGE DISCHARGE.--26 years, 260 ft<sup>3</sup>/s, 188,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,820 ft<sup>3</sup>/s, June 2, 1983, gage height, 8.26 ft; no flow July 4, 5, 1962, Aug. 30, 31, Sept. 1, 2, 6, 7, 1979, Oct. 30, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,260 ft<sup>3</sup>/s, May 18, gage height, 6.11 ft; minimum daily, 39 ft<sup>3</sup>/s, many days during July and August.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR   | APR   | MAY   | JUN   | JUL    | AUG  | SEP  |
|-------------|-------|--------|------|------|------|-------|-------|-------|-------|--------|------|------|
| 1           | 65    | 138    | 132  | 93   | 83   | 94    | 119   | 776   | 311   | 591    | 39   | 42   |
| 2           | 65    | 149    | 121  | 94   | 86   | 92    | 153   | 857   | 504   | 584    | 39   | 42   |
| 3           | 66    | 155    | 118  | 93   | 88   | 91    | 198   | 876   | 643   | 581    | 39   | 42   |
| 4           | 66    | 158    | 121  | 94   | 91   | 95    | 278   | 767   | 608   | 573    | 39   | 43   |
| 5           | 66    | 160    | 130  | 105  | 92   | 111   | 363   | 679   | 690   | 565    | 39   | 43   |
| 6           | 66    | 158    | 140  | 110  | 94   | 142   | 434   | 638   | 818   | 559    | 39   | 43   |
| 7           | 66    | 161    | 149  | 108  | 94   | 187   | 529   | 657   | 811   | 352    | 39   | 43   |
| 8           | 66    | 161    | 149  | 108  | 94   | 244   | 563   | 706   | 803   | 141    | 39   | 43   |
| 9           | 66    | 157    | 137  | 106  | 94   | 287   | 550   | 762   | 800   | 139    | 39   | 43   |
| 10          | 66    | 137    | 123  | 100  | 95   | 286   | 509   | 790   | 742   | 138    | 39   | 43   |
| 11          | 66    | 145    | 118  | 95   | 97   | 272   | 455   | 798   | 680   | 138    | 39   | 43   |
| 12          | 66    | 139    | 111  | 93   | 102  | 255   | 425   | 824   | 674   | 138    | 39   | 43   |
| 13          | 66    | 145    | 109  | 92   | 108  | 245   | 395   | 862   | 670   | 137    | 40   | 43   |
| 14          | 66    | 145    | 110  | 92   | 117  | 259   | 359   | 922   | 667   | 136    | 40   | 43   |
| 15          | 66    | 149    | 111  | 94   | 121  | 269   | 332   | 974   | 667   | 138    | 40   | 43   |
| 16          | 66    | 147    | 113  | 90   | 125  | 280   | 317   | 1000  | 659   | 138    | 40   | 43   |
| 17          | 66    | 146    | 116  | 85   | 125  | 271   | 334   | 1060  | 656   | 97     | 39   | 43   |
| 18          | 66    | 142    | 114  | 81   | 123  | 241   | 357   | 1180  | 655   | 40     | 40   | 43   |
| 19          | 66    | 145    | 113  | 79   | 123  | 219   | 356   | 1190  | 652   | 39     | 40   | 43   |
| 20          | 66    | 149    | 113  | 77   | 123  | 193   | 384   | 1100  | 648   | 39     | 40   | 43   |
| 21          | 66    | 153    | 113  | 74   | 119  | 174   | 353   | 997   | 647   | 39     | 40   | 43   |
| 22          | 66    | 156    | 113  | 72   | 114  | 156   | 325   | 856   | 640   | 39     | 40   | 43   |
| 23          | 67    | 155    | 108  | 70   | 109  | 144   | 323   | 703   | 636   | 39     | 40   | 43   |
| 24          | 67    | 147    | 105  | 68   | 106  | 133   | 355   | 580   | 630   | 39     | 40   | 43   |
| 25          | 67    | 145    | 99   | 70   | 106  | 124   | 426   | 515   | 627   | 39     | 40   | 43   |
| 26          | 67    | 147    | 99   | 70   | 103  | 119   | 495   | 517   | 623   | 39     | 41   | 43   |
| 27          | 70    | 138    | 97   | 69   | 100  | 113   | 532   | 579   | 615   | 39     | 42   | 42   |
| 28          | 70    | 128    | 97   | 73   | 96   | 112   | 581   | 530   | 610   | 39     | 42   | 42   |
| 29          | 87    | 129    | 98   | 75   | ---  | 109   | 647   | 462   | 603   | 39     | 42   | 42   |
| 30          | 109   | 133    | 97   | 78   | ---  | 106   | 710   | 405   | 597   | 39     | 42   | 42   |
| 31          | 125   | ---    | 95   | 81   | ---  | 104   | ---   | 367   | ---   | 39     | 42   | ---  |
| TOTAL       | 2179  | 4417   | 3569 | 2689 | 2928 | 5527  | 12157 | 23929 | 19586 | 5692   | 1238 | 1283 |
| MEAN        | 70.3  | 147    | 115  | 86.7 | 105  | 178   | 405   | 772   | 653   | 184    | 39.9 | 42.8 |
| MAX         | 125   | 161    | 149  | 110  | 125  | 287   | 710   | 1190  | 818   | 591    | 42   | 43   |
| MIN         | 65    | 128    | 95   | 68   | 83   | 91    | 119   | 367   | 311   | 39     | 39   | 42   |
| AC-FT       | 4320  | 8760   | 7080 | 5330 | 5810 | 10960 | 24110 | 47460 | 38850 | 11290  | 2460 | 2540 |
| CAL YR 1986 | TOTAL | 171489 | MEAN | 470  | MAX  | 3040  | MIN   | 42    | AC-FT | 340100 |      |      |
| WTR YR 1987 | TOTAL | 85194  | MEAN | 233  | MAX  | 1190  | MIN   | 39    | AC-FT | 169000 |      |      |

## 10026500 BEAR RIVER NEAR RANDOLPH, UT

LOCATION.--Lat 41°48'02", long 111°04'20", in SE1/4 NE1/4 sec.7, T.12 N., R.8 E., Rich County, Hydrologic Unit 16010101, on left bank 3.7 mi upstream from Twin Creek, 5.0 mi upstream from Utah-Wyoming State line, and 11 mi northeast of Randolph.

DRAINAGE AREA.--1,616 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1943 to current year. Monthly discharge only for some periods, published in WSP 1314.

REVISED RECORDS.--WRD UT-74-1: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 6,200 ft from river-profile map. Prior to Aug. 17, 1971, 0.2 mi upstream at different datum. Aug. 17, 1971 to Sept. 30, 1986, at datum 10.0 ft lower.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Diversion for irrigation of about 94,500 acres upstream from station. Flow regulated by upstream reservoirs.

AVERAGE DISCHARGE.--44 years, 224 ft<sup>3</sup>/s, 162,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,630 ft<sup>3</sup>/s, June 4, 1983, gage height, 8.58 ft; minimum, 1.6 ft<sup>3</sup>/s, Nov. 12, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 772 ft<sup>3</sup>/s, May 22, gage height, 14.78 ft; minimum daily, 40 ft<sup>3</sup>/s, Sept. 20-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR   | APR   | MAY   | JUN   | JUL    | AUG  | SEP  |
|-------------|-------|--------|------|------|------|-------|-------|-------|-------|--------|------|------|
| 1           | 169   | e180   | e152 | e135 | e162 | e204  | e267  | 336   | 359   | 286    | e93  | e70  |
| 2           | 172   | e182   | e142 | e135 | e164 | e207  | e312  | 401   | 301   | 298    | e91  | e70  |
| 3           | 188   | e188   | e134 | e137 | e167 | e215  | 367   | 432   | 248   | 301    | e89  | e70  |
| 4           | 190   | e190   | e134 | e141 | e167 | e223  | 396   | 456   | 217   | 303    | e88  | 74   |
| 5           | 192   | e193   | e139 | e139 | e164 | e231  | 410   | 440   | 229   | 287    | e87  | 74   |
| 6           | 194   | e197   | e144 | e136 | e162 | e256  | 453   | 365   | 204   | 288    | e85  | 75   |
| 7           | 191   | e198   | e144 | e129 | e160 | e299  | 477   | 290   | 235   | 300    | e85  | 73   |
| 8           | 187   | e196   | e142 | e120 | e155 | e324  | 525   | 224   | 300   | 307    | e83  | 72   |
| 9           | 183   | e194   | e140 | e113 | e157 | e340  | 576   | 158   | 357   | 285    | e81  | 55   |
| 10          | 181   | e191   | e137 | e107 | e161 | 338   | 588   | 175   | 436   | 277    | e79  | 51   |
| 11          | 176   | e188   | e139 | e103 | e163 | 358   | 590   | 204   | 439   | 258    | e80  | 45   |
| 12          | 175   | e188   | e141 | e96  | e167 | e355  | e577  | 183   | 399   | 235    | e82  | 44   |
| 13          | 169   | e188   | e143 | e94  | e172 | e352  | e560  | 153   | 374   | 205    | e96  | 46   |
| 14          | 169   | e188   | e146 | e91  | e178 | e348  | e538  | 153   | 348   | 246    | e98  | 43   |
| 15          | 171   | e188   | e145 | e88  | e178 | e332  | e519  | 168   | 325   | 211    | e96  | 42   |
| 16          | 171   | e188   | e144 | e89  | e178 | e310  | e500  | 199   | 309   | 180    | e95  | 43   |
| 17          | 172   | e190   | e142 | e90  | e178 | e300  | e492  | 233   | 301   | 168    | e93  | 42   |
| 18          | 175   | e190   | e139 | e91  | e180 | e290  | e479  | 312   | 292   | 174    | e90  | 42   |
| 19          | 180   | e190   | e135 | e94  | e180 | e250  | e452  | 405   | 246   | 165    | e90  | 41   |
| 20          | 185   | e190   | e135 | e95  | e176 | e237  | e450  | 542   | 273   | 143    | e88  | 40   |
| 21          | 195   | e188   | e137 | e98  | e175 | e239  | e430  | 655   | 246   | e134   | e86  | 40   |
| 22          | 195   | e182   | e138 | e104 | e178 | e241  | e375  | 742   | 229   | e128   | e83  | 40   |
| 23          | 195   | e179   | e139 | e112 | e184 | e244  | e360  | 715   | 229   | e120   | e81  | 40   |
| 24          | 189   | e179   | e140 | e119 | e190 | e246  | 344   | 575   | 225   | e115   | e77  | 41   |
| 25          | 188   | e181   | e142 | e130 | e193 | e239  | 346   | 475   | 227   | e112   | e74  | 41   |
| 26          | 181   | e177   | e139 | e139 | e196 | e234  | 375   | 459   | 233   | e110   | e74  | 42   |
| 27          | 180   | e169   | e140 | e139 | e198 | e232  | 423   | 476   | 188   | e108   | e74  | 41   |
| 28          | 179   | e167   | e138 | e139 | e202 | e230  | 451   | 491   | 207   | e105   | e72  | 46   |
| 29          | 180   | e167   | e132 | e142 | ---  | e230  | 330   | 495   | 228   | e102   | e72  | 73   |
| 30          | 178   | e165   | e130 | e148 | ---  | e230  | 294   | 473   | 259   | e99    | e72  | 54   |
| 31          | e180  | ---    | e130 | e154 | ---  | e238  | ---   | 418   | ---   | e95    | e72  | ---  |
| TOTAL       | 5630  | 5551   | 4322 | 3647 | 4885 | 8372  | 13256 | 11803 | 8463  | 6145   | 2606 | 1570 |
| MEAN        | 182   | 185    | 139  | 118  | 174  | 270   | 442   | 381   | 282   | 198    | 84.1 | 52.3 |
| MAX         | 195   | 198    | 152  | 154  | 202  | 358   | 590   | 742   | 439   | 307    | 98   | 75   |
| MIN         | 169   | 165    | 130  | 88   | 155  | 204   | 267   | 153   | 188   | 95     | 72   | 40   |
| AC-FT       | 11170 | 11010  | 8570 | 7230 | 9690 | 16610 | 26290 | 23410 | 16790 | 12190  | 5170 | 3110 |
| CAL YR 1986 | TOTAL | 219533 | MEAN | 601  | MAX  | 3010  | MIN   | 49    | AC-FT | 435400 |      |      |
| WTR YR 1987 | TOTAL | 76250  | MEAN | 209  | MAX  | 742   | MIN   | 40    | AC-FT | 151200 |      |      |

e Estimated

## 10028500 BEAR RIVER BELOW PIXLEY DAM, NEAR COKEVILLE, WY

LOCATION.--Lat 41°56'20", long 110°59'05", in SE1/4 SE1/4 sec.25, T.23 N., R.120 W., Lincoln County, Hydrologic Unit 16010102, 800 ft downstream from Pixley Dam, 11 mi south of Cokeville, and 17.5 mi downstream from Twin Creek.

DRAINAGE AREA.--2,032 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1941 to November 1943 (published as Bear River near Cokeville), October 1952 to September 1956, May 1958 to current year (seasonal only). Monthly discharge only for some periods, published in WSP 1314.

REVISED RECORDS.--WRD UT-74-1: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 6,185 ft, from river-profile map. Oct. 31, 1941 to Nov. 30, 1943, at site 200 ft downstream at different datum.

REMARKS.--Records good, except estimated daily discharges, which are poor. Natural flow of stream affected by diversions for irrigation, return flow from irrigated areas, and regulation by upstream reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,300 ft<sup>3</sup>/s, Mar. 25, 1956; minimum recorded, 0.24 ft<sup>3</sup>/s, Apr. 26, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 687 ft<sup>3</sup>/s, May 23; minimum daily, 60 ft<sup>3</sup>/s, Sept. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY   | JUN   | JUL   | AUG  | SEP  |
|-------|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|------|------|
| 1     | --- | --- | --- | --- | --- | --- | --- | 432   | 499   | 251   | 105  | 99   |
| 2     | --- | --- | --- | --- | --- | --- | --- | 475   | 452   | 256   | 111  | 95   |
| 3     | --- | --- | --- | --- | --- | --- | --- | 484   | 394   | 264   | 106  | 94   |
| 4     | --- | --- | --- | --- | --- | --- | --- | 494   | 332   | 271   | 102  | 95   |
| 5     | --- | --- | --- | --- | --- | --- | --- | 499   | 210   | 282   | 99   | 93   |
| 6     | --- | --- | --- | --- | --- | --- | --- | 423   | 207   | 312   | 96   | 93   |
| 7     | --- | --- | --- | --- | --- | --- | --- | 359   | 213   | 386   | 107  | 92   |
| 8     | --- | --- | --- | --- | --- | --- | --- | 316   | 215   | 503   | 109  | 89   |
| 9     | --- | --- | --- | --- | --- | --- | --- | 266   | 275   | 544   | 106  | 85   |
| 10    | --- | --- | --- | --- | --- | --- | --- | 223   | 340   | 430   | 104  | 71   |
| 11    | --- | --- | --- | --- | --- | --- | --- | 237   | 369   | 441   | 104  | 71   |
| 12    | --- | --- | --- | --- | --- | --- | --- | 249   | 421   | 386   | 100  | 65   |
| 13    | --- | --- | --- | --- | --- | --- | --- | 223   | 423   | 320   | 100  | 65   |
| 14    | --- | --- | --- | --- | --- | --- | --- | 195   | 410   | 309   | 101  | 67   |
| 15    | --- | --- | --- | --- | --- | --- | --- | 150   | 386   | 316   | 114  | 63   |
| 16    | --- | --- | --- | --- | --- | --- | --- | 129   | 373   | 267   | 115  | 63   |
| 17    | --- | --- | --- | --- | --- | --- | --- | 168   | 355   | 242   | 119  | 62   |
| 18    | --- | --- | --- | --- | --- | --- | --- | 260   | 346   | 239   | 116  | 62   |
| 19    | --- | --- | --- | --- | --- | --- | --- | 297   | 326   | 242   | 112  | 62   |
| 20    | --- | --- | --- | --- | --- | --- | --- | 344   | 276   | 217   | 109  | 62   |
| 21    | --- | --- | --- | --- | --- | --- | --- | 535   | 290   | 189   | 106  | e60  |
| 22    | --- | --- | --- | --- | --- | --- | --- | 655   | 282   | 181   | 109  | e62  |
| 23    | --- | --- | --- | --- | --- | --- | --- | 687   | 271   | 165   | 109  | e62  |
| 24    | --- | --- | --- | --- | --- | --- | --- | 666   | 251   | 150   | 110  | e64  |
| 25    | --- | --- | --- | --- | --- | --- | --- | 620   | 244   | 137   | 110  | e62  |
| 26    | --- | --- | --- | --- | --- | --- | --- | 584   | 242   | 132   | 111  | e63  |
| 27    | --- | --- | --- | --- | --- | --- | --- | 577   | 232   | 127   | 115  | e64  |
| 28    | --- | --- | --- | --- | --- | --- | --- | 580   | 222   | 123   | 115  | e70  |
| 29    | --- | --- | --- | --- | --- | --- | --- | 584   | 227   | 119   | 112  | e88  |
| 30    | --- | --- | --- | --- | --- | --- | --- | 577   | 239   | 115   | 110  | e95  |
| 31    | --- | --- | --- | --- | --- | --- | --- | 547   | ---   | 107   | 104  | ---  |
| TOTAL | --- | --- | --- | --- | --- | --- | --- | 12835 | 9322  | 8023  | 3346 | 2238 |
| MEAN  | --- | --- | --- | --- | --- | --- | --- | 414   | 311   | 259   | 108  | 74.6 |
| MAX   | --- | --- | --- | --- | --- | --- | --- | 687   | 499   | 544   | 119  | 99   |
| MIN   | --- | --- | --- | --- | --- | --- | --- | 129   | 207   | 107   | 96   | 60   |
| AC-FT | --- | --- | --- | --- | --- | --- | --- | 25460 | 18490 | 15910 | 6640 | 4440 |

e Estimated



## 10032000 SMITHS FORK NEAR BORDER, WY

LOCATION (REVISED).--Lat 42°17'36", long 110°52'18", in NE1/4 SW1/4 SW1/4 sec.28, T.27 N., R.118 W., Lincoln County, Hydrologic Unit 16010102, on left bank 4.9 mi upstream from Howland Creek, 5.6 mi downstream from Hobbie Creek, and 12.4 mi northeast of Border.

DRAINAGE AREA.--165 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1942 to current year.

REVISED RECORDS.--WSP 1734: 1952(M).

GAGE.--Water-stage recorder. Elevation of gage is 6,720 ft, from topographic map. Prior to Oct. 16, 1945, at site 1.2 mi downstream at different datum. Oct. 16, 1945 to Nov. 1986 at site 0.4 mi downstream at different datum.

REMARKS.--Records poor. One diversion for irrigation of about 200 acres upstream from station.

AVERAGE DISCHARGE.--45 years, 201 ft<sup>3</sup>/s, 145,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft<sup>3</sup>/s, June 4, 1986, gage height, 5.66 ft; minimum, 21 ft<sup>3</sup>/s, Mar. 29, 1975, Jan. 24, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 353 ft<sup>3</sup>/s, May 21; minimum daily, 57 ft<sup>3</sup>/s, Feb. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY   | JUN   | JUL  | AUG  | SEP  |
|-------|------|------|------|------|------|------|------|-------|-------|------|------|------|
| 1     | 230  | e110 | e82  | e70  | e66  | e60  | e64  | 310   | 272   | 156  | 114  | 89   |
| 2     | 244  | e107 | e78  | e74  | e66  | e58  | e67  | 295   | 266   | 151  | 111  | 88   |
| 3     | 332  | e109 | e75  | e72  | e66  | e58  | e73  | 262   | 262   | 147  | 110  | 90   |
| 4     | 300  | e104 | e72  | e73  | e64  | e60  | e80  | 248   | 257   | 145  | 109  | 104  |
| 5     | 258  | e99  | e72  | e74  | e62  | e60  | e82  | 246   | 256   | 143  | 110  | 96   |
| 6     | 228  | e99  | e72  | e72  | e64  | e62  | e93  | 249   | 249   | 141  | 109  | 89   |
| 7     | 206  | e98  | e72  | e67  | e65  | e66  | e97  | 259   | 248   | 142  | 107  | 83   |
| 8     | 187  | e98  | e73  | e61  | e65  | e66  | e100 | 264   | 245   | 142  | 106  | 83   |
| 9     | 171  | e100 | e76  | e63  | e64  | e66  | e103 | 270   | 245   | 147  | 105  | 84   |
| 10    | 159  | e102 | e74  | e68  | e66  | e66  | e108 | 271   | 242   | 166  | 104  | 83   |
| 11    | 148  | e99  | e76  | e71  | e65  | e66  | e114 | 280   | 230   | 169  | 106  | 81   |
| 12    | 139  | e105 | e77  | e73  | e67  | e68  | e116 | 279   | 220   | 152  | 104  | 81   |
| 13    | 132  | e103 | e79  | e76  | e65  | e70  | e117 | 284   | 215   | 141  | 105  | 82   |
| 14    | 125  | e103 | e80  | e76  | e65  | e70  | e117 | 281   | 210   | 122  | 114  | 81   |
| 15    | 119  | e101 | e80  | e76  | e66  | e68  | e123 | 292   | 206   | 119  | 138  | 79   |
| 16    | e113 | e95  | e85  | e76  | e68  | e68  | e139 | 305   | 203   | 120  | 124  | 78   |
| 17    | e117 | e95  | e83  | e77  | e69  | e68  | e168 | 314   | 192   | 137  | 119  | 77   |
| 18    | e119 | e96  | e82  | e78  | e66  | e68  | e197 | 338   | 186   | 128  | 109  | 79   |
| 19    | e124 | e99  | e81  | e80  | e64  | e68  | e191 | 349   | 181   | 121  | 109  | 78   |
| 20    | e129 | e102 | e79  | e78  | e62  | e68  | e176 | 347   | 178   | 118  | 110  | 76   |
| 21    | e129 | e100 | e78  | e76  | e62  | e66  | e147 | 353   | 175   | 132  | 111  | 75   |
| 22    | e125 | e99  | e76  | e77  | e62  | e68  | 133  | 339   | 173   | 145  | 115  | 76   |
| 23    | e121 | e98  | e75  | e68  | e61  | e70  | 180  | 316   | 172   | 125  | 111  | 77   |
| 24    | e118 | e98  | e75  | e66  | e60  | e68  | 208  | 304   | 165   | 121  | 125  | 76   |
| 25    | e116 | e96  | e75  | e64  | e58  | e66  | 215  | 295   | 160   | 121  | 132  | 76   |
| 26    | e112 | e88  | e77  | e64  | e58  | e65  | 223  | 292   | 157   | 119  | 122  | 75   |
| 27    | e108 | e86  | e80  | e64  | e57  | e65  | 246  | 290   | 153   | 120  | 118  | 77   |
| 28    | e110 | e88  | e77  | e64  | e59  | e65  | 273  | 286   | 152   | 120  | 106  | 77   |
| 29    | e108 | e90  | e72  | e64  | ---  | e63  | 290  | 291   | 159   | 119  | 103  | 76   |
| 30    | e106 | e86  | e68  | e65  | ---  | e61  | 289  | 285   | 165   | 119  | 100  | 75   |
| 31    | e110 | ---  | e68  | e64  | ---  | e61  | ---  | 277   | ---   | 116  | 91   | ---  |
| TOTAL | 4843 | 2953 | 2369 | 2191 | 1782 | 2022 | 4529 | 9071  | 6194  | 4164 | 3457 | 2441 |
| MEAN  | 156  | 98.4 | 76.4 | 70.7 | 63.6 | 65.2 | 151  | 293   | 206   | 134  | 112  | 81.4 |
| MAX   | 332  | 110  | 85   | 80   | 69   | 70   | 290  | 353   | 272   | 169  | 138  | 104  |
| MIN   | 106  | 86   | 68   | 61   | 57   | 58   | 64   | 246   | 152   | 116  | 91   | 75   |
| AC-FT | 9610 | 5860 | 4700 | 4350 | 3530 | 4010 | 8980 | 17990 | 12290 | 8260 | 6860 | 4840 |

CAL YR 1986 TOTAL 119149 MEAN 326 MAX 2000 MIN 52 AC-FT 236300  
WTR YR 1987 TOTAL 46016 MEAN 126 MAX 353 MIN 57 AC-FT 91270

e Estimated

10035000 SMITHS FORK AT COKEVILLE, WY

LOCATION.--Lat 42°05'47", long 110°56'24", in NE1/4 NW1/4 NW1/4 sec.4, T.24 N., R.119 W., Lincoln County, Hydrologic Unit 16010102, 900 ft upstream from U.S. Highway 30N, 1 mi northeast of Cokeville, and 2 mi upstream from mouth.

DRAINAGE AREA.--275 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1983 to current year.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| AUG<br>19... | 1600 | E90                                             | 17.0                                 | <0.01                                                           | <0.01                                                        | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| E-Estimate.  |      |                                                 |                                      |                                                                 |                                                              |                           |                            |                            |                            |

## BEAR RIVER BASIN

10038000 BEAR RIVER BELOW SMITHS FORK, NEAR COKEVILLE, WY

LOCATION.--Lat 42°07'36", long 110°58'21", in NW1/4 SE1/4 NE1/4 sec.28, T.25 N., R.119 W., Lincoln County, Hydrologic Unit 16010102, on left bank 1.1 mi upstream from Wyman Dam, 2.8 mi northwest of Cokeville, and 3.8 mi downstream from Smiths Fork.

DRAINAGE AREA.--2,447 mi<sup>2</sup>.

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

REVISED RECORDS.--WRD UT-74-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,140 ft from river-profile map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by diversion for irrigation, return flow from irrigated areas, and regulation by upstream reservoirs.

AVERAGE DISCHARGE.--33 years, 491 ft<sup>3</sup>/s, 355,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,620 ft<sup>3</sup>/s, June 7, 1983, gage height, 8.75 ft; minimum, 31 ft<sup>3</sup>/s, Oct. 4, 5, 6, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,180 ft<sup>3</sup>/s, May 23, gage height, 4.76 ft; minimum daily, 134 ft<sup>3</sup>/s, Sept. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1     | 603   | 517   | 415   | e300  | e370  | e440  | 452   | 661   | 887   | 427   | 202   | e188 |
| 2     | 613   | 525   | 420   | 314   | e370  | e450  | 468   | 723   | 807   | 433   | 198   | 188  |
| 3     | 627   | 530   | 394   | e300  | e390  | e460  | 553   | 730   | 731   | 425   | 197   | 186  |
| 4     | 660   | 545   | 378   | 314   | 397   | e480  | 622   | 719   | 664   | 424   | 191   | 192  |
| 5     | 629   | 560   | 410   | e310  | e380  | 486   | 689   | 722   | 549   | 432   | 184   | 188  |
| 6     | 623   | 566   | 476   | e300  | e380  | 487   | 759   | 698   | 480   | 441   | 180   | 180  |
| 7     | 616   | 570   | 451   | e295  | e350  | 629   | 824   | 569   | 493   | 520   | 179   | 181  |
| 8     | 603   | 570   | 399   | e270  | e340  | 738   | 846   | 553   | 505   | 541   | 188   | 179  |
| 9     | 589   | 562   | 394   | e250  | e350  | 756   | 868   | 500   | 530   | 773   | 185   | 178  |
| 10    | 579   | 546   | e390  | e230  | e360  | 723   | 956   | 438   | 624   | 619   | 181   | 169  |
| 11    | 566   | 511   | 399   | e230  | e370  | 705   | 927   | 440   | 656   | 604   | 177   | 155  |
| 12    | 554   | 582   | e400  | e210  | e370  | 707   | 894   | 466   | 701   | 572   | 173   | 151  |
| 13    | 548   | 537   | e400  | e210  | e380  | 705   | 846   | 455   | 743   | 488   | 168   | 143  |
| 14    | 536   | 531   | 388   | e200  | 386   | 719   | 797   | 427   | 735   | 426   | 171   | 140  |
| 15    | 533   | 530   | 396   | e190  | 376   | 715   | 773   | 406   | 705   | 450   | 201   | 142  |
| 16    | 537   | 536   | 391   | e200  | 372   | 680   | 777   | 370   | 669   | 405   | 226   | 134  |
| 17    | 539   | 540   | 397   | e200  | 398   | 663   | 777   | 393   | 627   | 390   | 217   | 135  |
| 18    | 544   | 537   | 408   | e200  | 390   | e620  | 679   | 508   | 593   | 365   | 212   | 136  |
| 19    | 553   | 545   | 363   | e210  | e390  | e600  | 676   | 590   | 575   | 354   | 210   | 138  |
| 20    | 574   | 537   | 334   | e210  | e390  | e560  | 664   | 631   | 510   | 346   | 209   | 145  |
| 21    | 571   | 527   | e330  | e220  | e380  | e475  | 570   | 796   | 506   | 316   | e203  | 146  |
| 22    | 574   | 518   | e320  | e230  | e380  | e450  | 513   | 1040  | 499   | 322   | e201  | 141  |
| 23    | 563   | 507   | e328  | e250  | e400  | e470  | 510   | 1150  | 491   | 298   | e201  | 143  |
| 24    | 553   | 512   | e330  | e270  | e420  | e480  | 466   | 1150  | 495   | 274   | e203  | 139  |
| 25    | 540   | 510   | e305  | e300  | e420  | e490  | 455   | 1090  | 465   | 253   | e205  | 138  |
| 26    | 532   | 496   | e300  | e310  | e420  | 484   | 471   | 1030  | 451   | 241   | e205  | 139  |
| 27    | 521   | 484   | 327   | e320  | e440  | 470   | 500   | 1030  | 440   | 236   | e205  | 138  |
| 28    | 513   | 478   | e320  | e310  | e440  | 460   | 490   | 1010  | 422   | 229   | e200  | 137  |
| 29    | 508   | 481   | e315  | e310  | ---   | 459   | 482   | 1030  | 417   | 224   | e197  | 139  |
| 30    | 505   | 477   | e310  | e330  | ---   | 459   | 552   | 999   | 438   | 224   | e192  | 173  |
| 31    | 512   | ---   | e305  | e350  | ---   | 458   | ---   | 955   | ---   | 216   | e188  | ---  |
| TOTAL | 17518 | 15867 | 11493 | 8143  | 10809 | 17478 | 19856 | 22279 | 17408 | 12268 | 6049  | 4681 |
| MEAN  | 565   | 529   | 371   | 263   | 386   | 564   | 662   | 719   | 580   | 396   | 195   | 156  |
| MAX   | 660   | 582   | 476   | 350   | 440   | 756   | 956   | 1150  | 887   | 773   | 226   | 192  |
| MIN   | 505   | 477   | 300   | 190   | 340   | 440   | 452   | 370   | 417   | 216   | 168   | 134  |
| AC-FT | 34750 | 31470 | 22800 | 16150 | 21440 | 34670 | 39380 | 44190 | 34530 | 24330 | 12000 | 9280 |

|             |       |        |      |      |     |      |     |     |       |        |
|-------------|-------|--------|------|------|-----|------|-----|-----|-------|--------|
| CAL YR 1986 | TOTAL | 403899 | MEAN | 1107 | MAX | 4180 | MIN | 140 | AC-FT | 801100 |
| WTR YR 1987 | TOTAL | 163849 | MEAN | 449  | MAX | 1150 | MIN | 134 | AC-FT | 325000 |

e Estimated

## 10039500 BEAR RIVER AT BORDER, WY

LOCATION.--Lat 42°12'40", long 111°03'11", in NE1/4 NE1/4 NE1/4 sec.15, T.14 S., R.46 E., Bear Lake County, Idaho, Hydrologic Unit 16010102, on left bank 0.2 mi west of Wyoming-Idaho State line, 0.5 mi west of Border, and 2.1 mi upstream from Thomas Fork.

DRAINAGE AREA.--2,486 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1937 to current year.

REVISED RECORDS.--WRD UT-74-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,051.63 ft NGVD of 1929, unadjusted.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by regulation of upstream reservoirs, diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--50 years, 464 ft<sup>3</sup>/s, 336,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,880 ft<sup>3</sup>/s, June 7, 1983, gage height, 9.69 ft; minimum, 24 ft<sup>3</sup>/s, Apr. 29, 30, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 974 ft<sup>3</sup>/s, May 24, gage height, 4.54 ft; minimum discharge, 127 ft<sup>3</sup>/s, Sept. 16, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL    | AUG   | SEP  |
|-------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|--------|-------|------|
| 1           | 504   | 431    | 409   | e380  | e500  | e400  | 404   | 558   | 821   | 356    | 210   | 174  |
| 2           | 513   | 440    | 419   | e400  | e480  | e410  | 440   | 622   | 760   | 371    | 199   | 169  |
| 3           | 524   | 446    | 418   | e420  | e460  | e420  | 520   | 638   | 668   | 383    | 201   | 169  |
| 4           | 546   | 459    | 411   | e450  | e430  | e430  | 579   | 628   | 624   | 382    | 194   | 170  |
| 5           | 524   | 472    | 414   | e480  | e420  | e460  | 644   | 634   | 556   | 390    | 189   | 170  |
| 6           | 512   | 481    | 443   | e400  | e420  | e520  | 705   | 627   | 473   | 397    | 183   | 166  |
| 7           | 506   | 490    | 440   | e330  | e420  | e550  | 766   | 534   | 467   | 441    | 179   | 162  |
| 8           | 494   | 492    | 388   | e310  | e410  | e560  | 791   | 508   | 482   | 476    | 185   | 162  |
| 9           | 482   | 489    | e360  | e290  | e400  | e520  | 803   | 467   | 469   | 627    | 177   | 161  |
| 10          | 473   | 482    | e320  | e270  | e420  | e490  | 875   | 422   | 534   | 594    | 170   | 156  |
| 11          | 461   | 452    | e340  | e280  | e540  | e480  | 861   | 393   | 556   | 576    | 146   | 144  |
| 12          | 447   | 494    | e380  | e300  | e500  | e460  | 841   | 378   | 571   | 553    | 144   | 140  |
| 13          | 442   | 487    | e390  | e300  | e470  | e480  | 799   | 377   | 604   | 488    | 140   | 135  |
| 14          | 433   | 472    | e390  | e290  | e490  | e480  | 754   | 363   | 598   | 422    | 139   | 132  |
| 15          | 427   | 472    | e380  | e260  | e460  | e530  | 728   | 344   | 584   | 425    | 158   | 131  |
| 16          | 427   | 478    | e380  | e220  | e420  | e600  | 726   | 315   | 562   | 407    | 181   | 131  |
| 17          | 429   | 484    | e370  | e210  | e420  | e620  | 729   | 327   | 530   | 391    | 179   | 133  |
| 18          | 434   | 486    | e350  | e230  | e450  | e540  | 666   | 386   | 493   | 370    | 177   | 144  |
| 19          | 444   | 489    | e330  | e270  | e450  | e500  | 628   | 464   | 480   | 351    | 173   | 144  |
| 20          | 458   | 494    | e370  | e230  | e430  | e490  | 619   | 495   | 444   | 345    | 174   | 148  |
| 21          | 468   | 482    | e390  | e230  | e410  | e450  | 565   | 586   | 422   | 331    | 173   | 148  |
| 22          | 466   | 480    | e400  | e260  | e420  | e460  | 493   | 792   | 410   | 326    | 177   | 146  |
| 23          | 462   | 467    | e390  | e300  | e430  | e480  | 469   | 933   | 395   | 316    | 174   | 145  |
| 24          | 452   | 470    | e390  | e370  | e430  | e500  | 452   | 968   | 392   | 292    | 181   | 144  |
| 25          | 442   | 473    | e400  | e450  | e410  | e500  | 429   | 942   | 366   | 270    | 199   | 140  |
| 26          | 438   | 466    | e410  | e480  | e390  | e480  | 436   | 913   | 352   | 256    | 190   | 139  |
| 27          | 430   | 451    | e410  | e430  | e380  | e460  | 455   | 916   | 345   | 246    | 186   | 136  |
| 28          | 426   | 450    | e410  | e450  | e390  | e447  | 469   | 904   | 336   | 241    | 189   | 137  |
| 29          | 423   | 458    | e400  | e410  | ---   | 434   | 432   | 911   | 334   | 236    | 190   | 138  |
| 30          | 423   | 455    | e390  | e420  | ---   | 413   | 488   | 898   | 358   | 231    | 184   | 152  |
| 31          | 428   | ---    | e380  | e440  | ---   | 414   | ---   | 866   | ---   | 224    | 180   | ---  |
| TOTAL       | 14338 | 14142  | 12072 | 10560 | 12250 | 14978 | 18566 | 19109 | 14986 | 11714  | 5521  | 4466 |
| MEAN        | 463   | 471    | 389   | 341   | 437   | 483   | 619   | 616   | 500   | 378    | 178   | 149  |
| MAX         | 546   | 494    | 443   | 480   | 540   | 620   | 875   | 968   | 821   | 627    | 210   | 174  |
| MIN         | 423   | 431    | 320   | 210   | 380   | 400   | 404   | 315   | 334   | 224    | 139   | 131  |
| AC-FT       | 28440 | 28050  | 23940 | 20950 | 24300 | 29710 | 36830 | 37900 | 29720 | 23230  | 10950 | 8860 |
| CAL YR 1986 | TOTAL | 395402 | MEAN  | 1083  | MAX   | 4180  | MIN   | 150   | AC-FT | 784300 |       |      |
| WTR YR 1987 | TOTAL | 152702 | MEAN  | 418   | MAX   | 968   | MIN   | 131   | AC-FT | 302900 |       |      |

e Estimated

## BEAR RIVER BASIN

10039500 BEAR RIVER AT BORDER, WY--Continued  
(National stream-quality accounting network station)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1965 to September 1976, January 1978 to September 1981.

WATER TEMPERATURES: October 1965 to September 1976, January 1978 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE; Maximum daily, 1,580 microsiemens, Dec. 27, 1975; minimum daily, 312 microsiemens, Apr. 3, 1969.

WATER TEMPERATURES: Maximum, 23.5°C, Aug. 14, 1980; minimum, 0.0°C on many days during winter periods.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>AIR<br>(DEG C) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | TUR-<br>BID-<br>ITY<br>(NTU) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | BARO-<br>METRIC<br>PRES-<br>SURE<br>(MM<br>OF<br>HG) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOC-<br>CI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|------------------------------------|--------------------------------------|------------------------------|-------------------------------------|------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------|
| DEC<br>01... | 1100 | 400                                             | 580                                               | 8.2                            | -3.5                               | 0.0                                  | 5.1                          | --                                  | 610                                                  | K1                                                             | K18                                                                     |
| MAR<br>27... | 1320 | 459                                             | 710                                               | 8.1                            | 2.0                                | 3.0                                  | 78                           | 10.7                                | 610                                                  | K3                                                             | 59                                                                      |
| JUN<br>02... | 0945 | 780                                             | 780                                               | 8.4                            | 11.0                               | 13.0                                 | 32                           | 7.6                                 | 610                                                  | K42                                                            | 80                                                                      |
| JUL<br>21... | 1040 | 327                                             | 670                                               | 8.4                            | 20.0                               | 17.0                                 | 28                           | 6.9                                 | 610                                                  | 98                                                             | 110                                                                     |
| AUG<br>10... | 1010 | 178                                             | 630                                               | 8.2                            | 21.5                               | 18.0                                 | 17                           | 6.8                                 | 610                                                  | 60                                                             | 1100                                                                    |
| 26...        | 1130 | 188                                             | 580                                               | 8.3                            | 12.5                               | 14.5                                 | --                           | 7.9                                 | 610                                                  | 100                                                            | 54                                                                      |
| SEP<br>03... | 1020 | 164                                             | 570                                               | 8.2                            | 14.5                               | 16.0                                 | --                           | 7.2                                 | 610                                                  | 240                                                            | 380                                                                     |

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

[illegible][illegible]

## 10039500 BEAR RIVER AT BORDER, WY--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS NH4) | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | PHOS-<br>PHATE,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P04) |
|--------------|---------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|
| DEC<br>01... | 0.10                                                          | 0.01                                                 | 0.02                                                          | 0.03                                                            | 0.49                                                 | 0.5                                                                | <0.01                                       | <0.01                                                | <0.01                                                          | --                                                              |
| MAR<br>27... | 0.12                                                          | 0.11                                                 | 0.04                                                          | 0.05                                                            | 0.49                                                 | 0.6                                                                | 0.16                                        | 0.02                                                 | 0.01                                                           | 0.03                                                            |
| JUN<br>02... | <0.10                                                         | 0.04                                                 | 0.02                                                          | 0.03                                                            | 0.56                                                 | 0.6                                                                | 0.06                                        | 0.04                                                 | 0.01                                                           | 0.03                                                            |
| JUL<br>21... | --                                                            | --                                                   | --                                                            | --                                                              | --                                                   | --                                                                 | --                                          | --                                                   | --                                                             | --                                                              |
| AUG<br>10... | --                                                            | --                                                   | --                                                            | --                                                              | --                                                   | --                                                                 | --                                          | --                                                   | --                                                             | --                                                              |
| MAR<br>26... | <0.10                                                         | 0.03                                                 | 0.03                                                          | 0.04                                                            | 0.27                                                 | 0.3                                                                | 0.02                                        | <0.01                                                | 0.02                                                           | 0.06                                                            |
| SEP<br>03... | <0.10                                                         | 0.03                                                 | 0.03                                                          | 0.04                                                            | 0.37                                                 | 0.4                                                                | 0.01                                        | <0.01                                                | <0.01                                                          | --                                                              |

| DATE         | TIME | ALUM-<br>INUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AL) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BERYL-<br>LIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BE) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) | COBALT,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CO) | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) |
|--------------|------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|--------------------------------------------|
| DEC<br>01... | 1100 | <10                                                 | 2                                            | 120                                          | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 2                                            | 4                                          | <5                                         |
| MAR<br>27... | 1320 | 10                                                  | 2                                            | 130                                          | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 1                                            | 9                                          | <5                                         |
| JUL<br>21... | 1040 | 20                                                  | 2                                            | 150                                          | <0.5                                                 | <1                                           | 1                                                   | <3                                           | 1                                            | 7                                          | <5                                         |

| DATE         | LITHIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS LI) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | STRON-<br>TIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SR) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|--------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------------|--------------------------------------------|
| DEC<br>01... | 23                                           | 11                                                   | <0.1                                         | <10                                                   | 2                                            | <1                                                  | <1                                           | 460                                                  | <6                                                 | 3                                          |
| MAR<br>27... | 25                                           | 20                                                   | <0.1                                         | <10                                                   | 2                                            | <1                                                  | <1                                           | 500                                                  | <6                                                 | <3                                         |
| JUL<br>21... | 17                                           | 3                                                    | <0.1                                         | <10                                                   | <1                                           | 1                                                   | <1                                           | 470                                                  | <6                                                 | <3                                         |

## SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>PERCENT<br>FINER<br>THAN<br>.062 MM | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY) |
|--------------|------|-------------------------------------------------|--------------------------------------|------------------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------|
| DEC<br>01... | 1100 | 400                                             | 0.0                                  | 68                                                                     | 76                                        | 82                                                            |
| MAR<br>27... | 1320 | 459                                             | 3.0                                  | 96                                                                     | 124                                       | 154                                                           |
| JUN<br>02... | 0945 | 780                                             | 13.0                                 | 99                                                                     | 125                                       | 263                                                           |
| JUL<br>21... | 1040 | 327                                             | 17.0                                 | 97                                                                     | 140                                       | 124                                                           |
| AUG<br>10... | 1010 | 178                                             | 18.0                                 | 89                                                                     | 93                                        | 45                                                            |
| MAR<br>26... | 1130 | 188                                             | 14.5                                 | 94                                                                     | 81                                        | 41                                                            |
| SEP<br>03... | 1020 | 164                                             | 16.0                                 | 96                                                                     | 76                                        | 34                                                            |



## 10041000 THOMAS FORK NEAR WYOMING-IDAHO STATE LINE

LOCATION.--Lat 42°24'10", long 111°01'30", in SE1/4 NW1/4 sec.19, T.28 N., R.119 W., Lincoln County, Wyoming, Hydrologic Unit 16010102, on right bank 1.3 mi upstream from Wyoming-Idaho State line, 1.5 mi downstream from Giraffe Creek, and 3.5 mi northeast of Geneva, Idaho.

DRAINAGE AREA.--113 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,280 ft, from topographic map. Prior to Aug. 23, 1957, at site 0.2 mi upstream at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--38 years, 58.5 ft<sup>3</sup>/s, 42,380 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,860 ft<sup>3</sup>/s, May 15, 1984, gage height, 5.00 ft; minimum, 2.6 ft<sup>3</sup>/s, Mar. 2, 1956, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft<sup>3</sup>/s and maximum (\*):

| Date                                               | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                 | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|----------------------------------------------------|------|-----------------------------------|---------------------|--------------------------------------|------|-----------------------------------|---------------------|
| Apr. 5                                             | 2100 | *145                              | *1.76               | No peak greater than base discharge. |      |                                   |                     |
| Minimum daily, 12 ft <sup>3</sup> /s, Sept. 24-30. |      |                                   |                     |                                      |      |                                   |                     |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN   | JUL   | AUG  | SEP  |
|-------------|-------|-------|------|------|------|------|------|------|-------|-------|------|------|
| 1           | 42    | 30    | e19  | e17  | e20  | e23  | 34   | 53   | 44    | 29    | 17   | 13   |
| 2           | 44    | 29    | e18  | e17  | e20  | e24  | 44   | 53   | 43    | 26    | 17   | 13   |
| 3           | 44    | 29    | e17  | e18  | e20  | e24  | 52   | 45   | 42    | 26    | 16   | 14   |
| 4           | 39    | 28    | e17  | e18  | e20  | e24  | 62   | 42   | 41    | 24    | 16   | 18   |
| 5           | 37    | 28    | e17  | e19  | e18  | e25  | 81   | 41   | 40    | 24    | 16   | 15   |
| 6           | 37    | 29    | e17  | e18  | e18  | e26  | 85   | 39   | 40    | 23    | 16   | 14   |
| 7           | 36    | 28    | e17  | e18  | e19  | e26  | 73   | 38   | 44    | 23    | 16   | 14   |
| 8           | 35    | 29    | e17  | e17  | e19  | e27  | 63   | 37   | 44    | 23    | 16   | 14   |
| 9           | 34    | e27   | e16  | e16  | e20  | e27  | 57   | 37   | 45    | 24    | 16   | 14   |
| 10          | 34    | e26   | e15  | e15  | e21  | e28  | 53   | 37   | 50    | 32    | 15   | 13   |
| 11          | 34    | e25   | e16  | e15  | e22  | e29  | 55   | 37   | 41    | 31    | 15   | 13   |
| 12          | 33    | e26   | e16  | e16  | e22  | e30  | 41   | 35   | 37    | 25    | 15   | 13   |
| 13          | 33    | e25   | e17  | e16  | e23  | e30  | 39   | 35   | 36    | 23    | 15   | 13   |
| 14          | 32    | e23   | e17  | e16  | e23  | 29   | 44   | 35   | 35    | 22    | 18   | 13   |
| 15          | 32    | 21    | e16  | e15  | e23  | 24   | 52   | 33   | 34    | 21    | 24   | 14   |
| 16          | 32    | e21   | e16  | e16  | e23  | 23   | 60   | 36   | 35    | 21    | 18   | 14   |
| 17          | 32    | e22   | e15  | e16  | e23  | 26   | 64   | 50   | 33    | 24    | 16   | 13   |
| 18          | 33    | e22   | e15  | e16  | e22  | 27   | 65   | 55   | 32    | 23    | 15   | 13   |
| 19          | 36    | e23   | e15  | e15  | e22  | 23   | 61   | 55   | 31    | 21    | 15   | 13   |
| 20          | 44    | e23   | e16  | e15  | e22  | 21   | 50   | 54   | 30    | 20    | 14   | 13   |
| 21          | 35    | e22   | e17  | e15  | e22  | e20  | 45   | 56   | 30    | 25    | 15   | 13   |
| 22          | 34    | e21   | e17  | e15  | e22  | e21  | 47   | 54   | 29    | 28    | 15   | 13   |
| 23          | 33    | e20   | e17  | e16  | e23  | e20  | 50   | 48   | 29    | 21    | 14   | 13   |
| 24          | 32    | e20   | e17  | e16  | e22  | e22  | 52   | 46   | 28    | 20    | 19   | 12   |
| 25          | 31    | e20   | e17  | e17  | e21  | e21  | 50   | 47   | 27    | 19    | 21   | 12   |
| 26          | 31    | e20   | e18  | e17  | e21  | 22   | 49   | 49   | 27    | 19    | 16   | 12   |
| 27          | 31    | e20   | e18  | e18  | e21  | 20   | 47   | 50   | 26    | 19    | 15   | 12   |
| 28          | 30    | e21   | e18  | e18  | e22  | 20   | 46   | 49   | 26    | 19    | 14   | 12   |
| 29          | 31    | 21    | e18  | e18  | ---  | e22  | 46   | 56   | 27    | 19    | 14   | 12   |
| 30          | 31    | e20   | e18  | e18  | ---  | e25  | 47   | 50   | 31    | 19    | 14   | 12   |
| 31          | 31    | ---   | e18  | e19  | ---  | e28  | ---  | 46   | ---   | 18    | 13   | ---  |
| TOTAL       | 1073  | 719   | 522  | 516  | 594  | 757  | 1614 | 1398 | 1057  | 711   | 496  | 397  |
| MEAN        | 34.6  | 24.0  | 16.8 | 16.6 | 21.2 | 24.4 | 53.8 | 45.1 | 35.2  | 22.9  | 16.0 | 13.2 |
| MAX         | 44    | 30    | 19   | 19   | 23   | 30   | 85   | 56   | 50    | 32    | 24   | 18   |
| MIN         | 30    | 20    | 15   | 15   | 18   | 20   | 34   | 33   | 26    | 18    | 13   | 12   |
| AC-FT       | 2130  | 1430  | 1040 | 1020 | 1180 | 1500 | 3200 | 2770 | 2100  | 1410  | 984  | 787  |
| CAL YR 1986 | TOTAL | 48160 | MEAN | 132  | MAX  | 1020 | MIN  | 8.7  | AC-FT | 95530 |      |      |
| WTR YR 1987 | TOTAL | 9854  | MEAN | 27.0 | MAX  | 85   | MIN  | 12   | AC-FT | 19550 |      |      |

e Estimated

## 13010200 SNAKE RIVER ABOVE JACKSON LAKE AT FLAGG RANCH, WY

LOCATION.--Lat 44°05'21", long 110°41'38", in T.48 N., R.115 W., Teton County, Hydrologic Unit 17040101, Grand Teton National Park, on left bank 50 ft upstream of State Highway 89 bridge, 2 mi downstream of the south boundary of Yellowstone National Park, 600 ft downstream of the confluence with Sheffield Creek.

DRAINAGE AREA.--486 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1933 to current year.

GAGE.--Water-stage recorder. Datum of the gage is 6,801.61 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Coast and Geodetic Survey). A nonrecording cantilever chain gage was used from 1913-18 at a site 2.5 mi upstream at a different datum. In 1918, an auxiliary chain gage was installed at the current site and read periodically. Water-stage recorder installed July 1921 at the current site at a different datum and operated until July 1925. Records probably not comparable.

REMARKS.--Records good except for periods of estimated daily discharges, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft<sup>3</sup>/s, May 31, 1984, gage height, 8.39 ft; minimum, 190 ft<sup>3</sup>/s, Sept. 26-30, gage height, 3.18 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,910 ft<sup>3</sup>/s, Apr. 30, gage height, 6.13 ft; minimum, 190 ft<sup>3</sup>/s, Sept. 26-30, gage height, 3.18 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY    | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| 1     | 508   | 416   | 419   | e318  | e360  | 376   | e305  | 2250   | 1670  | 439   | 344   | 221   |
| 2     | 511   | 401   | 418   | e318  | 363   | 379   | e295  | 2080   | 1440  | 443   | 329   | 221   |
| 3     | 498   | 404   | e405  | e320  | 365   | 375   | e290  | 1700   | 1310  | 432   | 318   | 218   |
| 4     | 482   | 396   | 399   | e320  | e360  | 378   | 318   | 1690   | 1220  | 409   | 308   | 223   |
| 5     | 482   | 398   | 399   | e315  | e355  | 376   | 339   | 1900   | 1150  | 398   | 298   | 233   |
| 6     | 490   | 426   | 413   | e310  | e350  | 378   | 378   | 2100   | 1110  | 384   | 291   | 229   |
| 7     | 499   | 419   | 409   | e300  | e340  | 379   | 391   | 2170   | 1190  | 372   | 279   | 223   |
| 8     | 495   | 409   | 405   | e290  | e335  | 391   | 393   | 2190   | 1170  | 367   | 281   | 219   |
| 9     | 483   | e408  | e380  | e280  | e345  | 397   | 377   | 2240   | 1050  | 364   | 274   | 216   |
| 10    | 477   | 407   | e385  | e270  | e355  | 389   | 373   | 2200   | 1110  | 389   | 265   | 213   |
| 11    | 451   | 417   | e375  | e285  | 369   | 384   | 404   | 2090   | 1080  | 495   | 268   | 212   |
| 12    | 432   | 433   | e365  | e300  | 372   | 378   | 397   | 1990   | 955   | 423   | 259   | 209   |
| 13    | 439   | 432   | e355  | e302  | 378   | 375   | 384   | 1970   | 879   | 381   | 252   | 207   |
| 14    | 441   | 436   | e360  | e300  | 388   | 378   | 396   | 1880   | 812   | 361   | 256   | 206   |
| 15    | 438   | 445   | e345  | e295  | 388   | 366   | 447   | 1780   | 764   | 344   | 263   | 205   |
| 16    | 432   | 452   | e335  | e295  | e380  | 370   | 545   | 1700   | 741   | 333   | 268   | 203   |
| 17    | 430   | 461   | e340  | e300  | 383   | 365   | 700   | 1820   | 688   | 470   | 253   | 200   |
| 18    | 432   | 467   | e330  | e302  | e375  | 366   | 864   | 2310   | 658   | 590   | 244   | 197   |
| 19    | 433   | 489   | e345  | e305  | e365  | 362   | 836   | 1960   | 640   | 466   | 240   | 197   |
| 20    | 438   | 474   | 354   | 310   | e350  | 346   | 692   | 1810   | 638   | 407   | 234   | 196   |
| 21    | 448   | 494   | 349   | 319   | 370   | e335  | 719   | 1690   | 590   | 423   | 227   | 195   |
| 22    | 432   | 488   | 348   | 317   | e365  | e325  | 907   | 1500   | 572   | 570   | 229   | 195   |
| 23    | 415   | 488   | 351   | 321   | e360  | e320  | 1210  | 1350   | 560   | 474   | 235   | 195   |
| 24    | 406   | 484   | 348   | 333   | e355  | e315  | 1460  | 1270   | 522   | 412   | 245   | 196   |
| 25    | 408   | 468   | 342   | 330   | e350  | e310  | 1670  | 1230   | 497   | 384   | 262   | 193   |
| 26    | 408   | 442   | 338   | 346   | e355  | e300  | 1880  | 1240   | 479   | 370   | 251   | 190   |
| 27    | 406   | 458   | e330  | e335  | e360  | e305  | 2040  | 1410   | 459   | 361   | 239   | 191   |
| 28    | 413   | 459   | e328  | e330  | 369   | e290  | 2130  | 1640   | 448   | 369   | 234   | 191   |
| 29    | 402   | 461   | e326  | e325  | ---   | e280  | 2230  | 1790   | 456   | 371   | 229   | 190   |
| 30    | 439   | 440   | e330  | e320  | ---   | e290  | 2320  | 1740   | 458   | 415   | 225   | 191   |
| 31    | 437   | ---   | e325  | e345  | ---   | e295  | ---   | 1680   | ---   | 363   | 223   | ---   |
| TOTAL | 13905 | 13272 | 11251 | 9656  | 10160 | 10873 | 25690 | 56370  | 25316 | 12779 | 8123  | 6175  |
| MEAN  | 449   | 442   | 363   | 311   | 363   | 351   | 856   | 1818   | 844   | 412   | 262   | 206   |
| MAX   | 511   | 494   | 419   | 346   | 388   | 397   | 2320  | 2310   | 1670  | 590   | 344   | 233   |
| MIN   | 402   | 396   | 325   | 270   | 335   | 280   | 290   | 1230   | 448   | 333   | 223   | 190   |
| AC-FT | 27580 | 26330 | 22320 | 19150 | 20150 | 21570 | 50960 | 111800 | 50210 | 25350 | 16110 | 12250 |

CAL YR 1986 TOTAL 422676 MEAN 1158 MAX 9210 MIN 275 AC-FT 838400  
WTR YR 1987 TOTAL 203570 MEAN 558 MAX 2320 MIN 190 AC-FT 403800

e Estimated

## 13010500 JACKSON LAKE NR MORAN, WY

LOCATION.--Lat 43°51'33", long 110°35'23", in SE1/4 SW1/4 sec. 18, T.45 N., R.114 W., Teton County, Hydrologic Unit 17040101, Grand Teton National Park, near left end of spillway over Jackson Lake Dam on Snake River, 4.3 mi west of Moran and at mile 988.9.

DRAINAGE AREA.--807 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1908 to September 1979, (1908-10 fragmentary), October 1984 to current year. Prior to October 1968, published as "at Moran".

REVISED RECORDS.--WRD Idaho 1974: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,700.00 ft, U.S. Bureau of Reclamation datum. National Geodetic Vertical Datum of 1929, is 2.08 ft lower. July 1908 to June 1, 1941, nonrecording gage at site 300 ft upstream at same datum. June 1, 1941 to Feb. 17, 1978, nonrecording gage at same site and datum.

REMARKS.--Reservoir was formed by log crib dam built in the outlet of the natural lake in 1906. Usable capacity was 300,000 acre-feet. This dam washed out in July 1910 and was replaced by an earth dam, forming a reservoir with a usable capacity of 380,000 acre-feet. The earth dam was raised in 1916, increasing the usable capacity to 790,000 acre-feet. In 1917, by dredging the outlet, the capacity was further increased to 847,000 acre-feet between elevations 6,730 ft (top of baffles to sluices) and 6,769 ft (top of spillway gates). Reservoir is used to store water for irrigation in Snake River Valley, Idaho. Figures given herein represent usable contents.

COOPERATION.--Reservoir elevations and capacity table provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 859,530 acre-ft, July 11, 1965, elevation, 6,769.49 ft; no usable contents for several days during period August to October 1919.

EXTREMES FOR CURRENT YEAR.--Maximum observed contents, 285,100 acre-ft, June 8, elevation, 6,745.03 ft; minimum, 54,700 acre-ft, Sept. 29, elevation, 6,733.14 ft.

Capacity table (elevation in feet, and contents, in acre-feet)

|       |         |
|-------|---------|
| 6,732 | 34,600  |
| 6,734 | 70,000  |
| 6,740 | 182,500 |
| 6,750 | 392,900 |

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
OBSERVATIONS AT 2400

| DAY | OCT     | NOV     | DEC     | JAN     | FEB     | MAR     | APR     | MAY     | JUN     | JUL     | AUG     | SEP     |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1   | 93000   | 85400   | 87000   | 85200   | 83200   | 90600   | 112500  | 209600  | 284700  | 268300  | 204100  | 124800  |
| 2   | 92600   | 84800   | 86400   | 85400   | 83400   | 91600   | 113300  | 216800  | 284000  | 266200  | 201900  | 120200  |
| 3   | 92300   | 85000   | 85900   | 85600   | 83600   | 92100   | 113800  | 222200  | 284000  | 263700  | 199200  | 117900  |
| 4   | 92100   | 85000   | 85700   | 85600   | 83900   | 92500   | 114400  | 226900  | 283600  | 261200  | 196000  | 113600  |
| 5   | 91900   | 85200   | 85900   | 85600   | 83900   | 92800   | 115300  | 232000  | 282600  | 258500  | 194000  | 111200  |
| 6   | 91400   | 85600   | 86100   | 85400   | 83600   | 93800   | 116200  | 238800  | 283000  | 256500  | 190600  | 108800  |
| 7   | 91200   | 85400   | 85900   | 85400   | 83200   | 94500   | 117400  | 247000  | 284000  | 253600  | 188700  | 106200  |
| 8   | 91200   | 85400   | 86300   | 85400   | 83200   | 95600   | 117900  | 254000  | 285100  | 251300  | 186300  | 102700  |
| 9   | 91000   | 85600   | 85900   | 85000   | 83200   | 96700   | 119800  | 260800  | 283800  | 249200  | 183900  | 100700  |
| 10  | 90500   | 85700   | 85900   | 84100   | 82700   | 97400   | 120500  | 267500  | 283800  | 247400  | 181200  | 98200   |
| 11  | 90100   | 86100   | 85700   | 83900   | 82800   | 98500   | 121800  | 272700  | 284400  | 245500  | 178000  | 95200   |
| 12  | 89400   | 85900   | 85700   | 83700   | 83000   | 99100   | 122800  | 275400  | 283800  | 243000  | 174700  | 92500   |
| 13  | 89200   | 86100   | 85600   | 83700   | 83700   | 100200  | 123700  | 277800  | 283600  | 240600  | 172000  | 90100   |
| 14  | 89000   | 86300   | 85600   | 83900   | 84100   | 100500  | 125200  | 278400  | 282600  | 237100  | 169300  | 87200   |
| 15  | 88400   | 86400   | 85600   | 83700   | 84300   | 101100  | 126500  | 281100  | 282200  | 234100  | 166900  | 84500   |
| 16  | 88100   | 87000   | 85600   | 83600   | 84800   | 101800  | 128400  | 281700  | 281300  | 231600  | 164800  | 80700   |
| 17  | 87700   | 88400   | 85700   | 83200   | 85200   | 102400  | 131400  | 283400  | 280500  | 231400  | 162500  | 76900   |
| 18  | 87400   | 88600   | 85600   | 83000   | 85600   | 103800  | 133700  | 284900  | 279000  | 231200  | 159600  | 74400   |
| 19  | 86800   | 89400   | 85600   | 82800   | 86100   | 104200  | 139300  | 284700  | 278200  | 229400  | 156700  | 71800   |
| 20  | 87500   | 89500   | 85600   | 82800   | 86400   | 104800  | 141200  | 283600  | 277500  | 226900  | 154200  | 69800   |
| 21  | 88400   | 89900   | 85600   | 82700   | 86800   | 105500  | 144000  | 283600  | 276300  | 225900  | 151500  | 67700   |
| 22  | 87400   | 89900   | 85400   | 82500   | 87400   | 106000  | 147100  | 283000  | 275900  | 224500  | 148600  | 65900   |
| 23  | 86400   | 90300   | 85400   | 82300   | 88100   | 107000  | 151700  | 281300  | 275200  | 222600  | 147100  | 63800   |
| 24  | 86100   | 90100   | 85600   | 82500   | 88100   | 107300  | 156500  | 280000  | 274800  | 220400  | 144600  | 61800   |
| 25  | 85600   | 89500   | 85600   | 82700   | 88300   | 107700  | 162100  | 278400  | 274200  | 218200  | 143100  | 60200   |
| 26  | 85200   | 89200   | 85600   | 82800   | 88800   | 108100  | 168100  | 277300  | 273600  | 216200  | 140300  | 58400   |
| 27  | 84800   | 88800   | 85400   | 83000   | 89400   | 109200  | 175100  | 279600  | 273100  | 214000  | 138000  | 56300   |
| 28  | 84800   | 88800   | 85200   | 83200   | 89400   | 109700  | 182700  | 281100  | 272500  | 212800  | 135400  | 55000   |
| 29  | 84600   | 88300   | 85200   | 83200   | ---     | 110700  | 190400  | 282600  | 270800  | 210600  | 132500  | 60700   |
| 30  | 85200   | 87900   | 85200   | 83000   | ---     | 111400  | 199400  | 283000  | 270200  | 209000  | 130100  | 60200   |
| 31  | 85600   | ---     | 85200   | 83200   | ---     | 113100  | ---     | 284000  | ---     | 206600  | 127400  | ---     |
| MAX | 93000   | 90300   | 87000   | 85600   | 89400   | 113000  | 199000  | 285000  | 285000  | 268000  | 204000  | 125000  |
| MIN | 84600   | 84800   | 85200   | 82300   | 82700   | 90600   | 112000  | 210000  | 270000  | 207000  | 127000  | 55000   |
| (+) | 6734.86 | 6734.99 | 6734.84 | 6734.73 | 6735.07 | 6736.36 | 6740.85 | 6744.98 | 6744.32 | 6741.21 | 6737.13 | 6733.45 |
| (+) | -7400   | 2300    | -2700   | -2000   | 6200    | 23700   | 86300   | 84600   | -13800  | -63600  | -79200  | -67200  |

CAL YR 1986 MAX 335000 MIN 46200 (+) -60800  
WTR YR 1987 MAX 285000 MIN 55000 (+) -32800

(+) Elevation, in feet, at end of month.

(+) Change in contents, in acre-feet.

## 13011000 SNAKE RIVER NEAR MORAN, WY

LOCATION.--Lat 43°51'31", long 110°35'09", in SW1/4 SE1/4 sec.18, T.45 N., R.114 W., Teton County, Hydrologic Unit 17040101, Grand Teton National Park, on left bank 1,000 ft downstream from Jackson Lake Dam, 4.1 mi west of Moran, and at mile 988.7.

DRAINAGE AREA.--807 mi<sup>2</sup>. Mean elevation, 8,040 ft.

PERIOD OF RECORD.--September 1903 to current year. Monthly discharge only for some periods, published in WSP 1317. Published as "South Fork Snake River at Moran" prior to October 1910 and as "Snake River at Moran" October 1910 to September 1968.

REVISED RECORDS.--WSP 1217: 1944(m). WSP 1347: 1906-10. WDR Idaho 1974: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,727.84 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to June 13, 1917, nonrecording gage, and June 14, 1917, to May 20, 1940, water-stage recorder, at site 1.5 mi downstream at different datums.

REMARKS.--Records good.

COOPERATION.--Gage readings for current reporting purposes provided by U.S. Bureau of Reclamation.

AVERAGE DISCHARGE.--84 years, 1,454 ft<sup>3</sup>/s, 1,053,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,100 ft<sup>3</sup>/s, June 12, 1918, gage height, 10.41 ft, site and datum then in use; maximum gage height, 10.74 ft, June 25, 1981; minimum, 0.30 ft<sup>3</sup>/s, Oct. 26, 27, 28, 1969, gage height, 0.89 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood during early June 1894 was considerably higher than that of June 12, 1918.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,160 ft<sup>3</sup>/s, May 20, gage height, 6.66 ft; minimum, 91 ft<sup>3</sup>/s, Mar. 2, 3, gage height, 1.70 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR  | APR  | MAY    | JUN    | JUL    | AUG    | SEP   |
|-------|-------|-------|-------|-------|-------|------|------|--------|--------|--------|--------|-------|
| 1     | 915   | 823   | 765   | 545   | 581   | 176  | 125  | 271    | 3050   | 1730   | 1740   | 1620  |
| 2     | 909   | 818   | 759   | 547   | 581   | 125  | 127  | 313    | 2800   | 1970   | 1730   | 1630  |
| 3     | 904   | 690   | 732   | 549   | 581   | 111  | 127  | 313    | 2320   | 1970   | 1720   | 1610  |
| 4     | 899   | 591   | 689   | 550   | 581   | 127  | 127  | 321    | 2120   | 1960   | 1700   | 1640  |
| 5     | 894   | 591   | 611   | 550   | 582   | 128  | 127  | 374    | 2130   | 1950   | 1710   | 1650  |
| 6     | 890   | 591   | 515   | e565  | 582   | 129  | 130  | 440    | 2130   | 1940   | 1720   | 1630  |
| 7     | 878   | 591   | 515   | e565  | 582   | 129  | 134  | 497    | 2130   | 1930   | 1710   | 1610  |
| 8     | 877   | 591   | 525   | e560  | 581   | 130  | 131  | 503    | 2410   | 1920   | 1700   | 1600  |
| 9     | 874   | 591   | 530   | e555  | 581   | 129  | 122  | 505    | 2580   | 1910   | 1690   | 1590  |
| 10    | 870   | 591   | 532   | e550  | 581   | 129  | 119  | 505    | 2580   | 1900   | 1680   | 1590  |
| 11    | 868   | 591   | 535   | e560  | 502   | 130  | 120  | 997    | 2590   | 1900   | 1670   | 1610  |
| 12    | 861   | 591   | 535   | e570  | 439   | 132  | 120  | 1830   | 2580   | 1890   | 1650   | 1590  |
| 13    | 854   | 591   | 535   | 576   | 345   | 132  | 119  | 2380   | 2580   | 1870   | 1640   | 1570  |
| 14    | 848   | 591   | 535   | 576   | 297   | 132  | 120  | 2590   | 2570   | 1870   | 1620   | 1590  |
| 15    | 845   | 591   | 538   | 576   | 297   | 132  | 125  | 2850   | 2200   | 1850   | 1610   | 1600  |
| 16    | 810   | 591   | 540   | 576   | 297   | 133  | 120  | 3050   | 1980   | 1840   | 1600   | 1570  |
| 17    | 805   | 598   | 540   | 576   | 297   | 134  | 130  | 3070   | 1980   | 1850   | 1580   | 1520  |
| 18    | 851   | 602   | 540   | 576   | 299   | 135  | 132  | 3670   | 1980   | 1850   | 1570   | 1470  |
| 19    | 852   | 602   | 543   | 576   | 301   | 135  | 127  | 4090   | 1740   | 1840   | 1590   | 1420  |
| 20    | 841   | 602   | 546   | 576   | 295   | 135  | 124  | 4100   | 1570   | 1820   | 1600   | 1380  |
| 21    | 835   | 605   | 545   | 576   | 301   | 135  | 123  | 3450   | 1560   | 1820   | 1600   | 1340  |
| 22    | 820   | 607   | 545   | 576   | 302   | 135  | 122  | 2980   | 1560   | 1820   | 1600   | 1300  |
| 23    | 829   | 607   | 545   | 576   | 303   | 135  | 122  | 2980   | 1450   | 1810   | 1590   | 1270  |
| 24    | 824   | 699   | 545   | 576   | 308   | 128  | 167  | 2970   | 1250   | 1810   | 1580   | 1230  |
| 25    | 821   | 775   | 545   | 576   | 309   | 122  | 135  | 2960   | 1180   | 1800   | 1600   | 1190  |
| 26    | 820   | 771   | 545   | 576   | 280   | 122  | 111  | 2710   | 1180   | 1790   | 1620   | 1160  |
| 27    | 816   | 771   | 545   | 576   | 207   | 121  | 126  | 2190   | 1150   | 1780   | 1600   | 1130  |
| 28    | 814   | 770   | 545   | 576   | 178   | 119  | 140  | 2030   | 1150   | 1770   | 1630   | 881   |
| 29    | 810   | 765   | 545   | 576   | ---   | 121  | 114  | 2140   | 1180   | 1770   | 1640   | 518   |
| 30    | 817   | 765   | 545   | 579   | ---   | 121  | 147  | 2480   | 1360   | 1760   | 1620   | 342   |
| 31    | 826   | ---   | 545   | 581   | ---   | 120  | ---  | 2760   | ---    | 1750   | 1600   | ---   |
| TOTAL | 26377 | 19553 | 17555 | 17618 | 11370 | 4022 | 3813 | 62319  | 59040  | 57440  | 50910  | 41851 |
| MEAN  | 851   | 652   | 566   | 568   | 406   | 130  | 127  | 2010   | 1968   | 1853   | 1642   | 1395  |
| MAX   | 915   | 823   | 765   | 581   | 582   | 176  | 167  | 4100   | 3050   | 1970   | 1740   | 1650  |
| MIN   | 805   | 591   | 515   | 545   | 178   | 111  | 111  | 271    | 1150   | 1730   | 1570   | 342   |
| AC-FT | 52320 | 38780 | 34820 | 34950 | 22550 | 7980 | 7560 | 123600 | 117100 | 113900 | 101000 | 83010 |

CAL YR 1986 TOTAL 790711 MEAN 2166 MAX 10400 MIN 500 AC-FT 1568000  
WTR YR 1987 TOTAL 371868 MEAN 1019 MAX 4100 MIN 111 AC-FT 737600

e Estimated

## 13011500 PACIFIC CREEK AT MORAN, WY

LOCATION.--Lat 43°51'04", long 110°30'59", in SW1/4 NW1/4 sec.23, T.45 N., R.114 W., Teton County, Hydrologic Unit 17040101, Grand Teton National Park, on left bank 40 ft upstream from bridge on U.S. Highway 287, at Moran, and at mile 0.5.

DRAINAGE AREA.--169 mi<sup>2</sup>. Mean elevation, 8,160 ft.

PERIOD OF RECORD.--July to November 1906 (gage heights only), July 1917 to September 1918 (no winter records), September 1944 to September 1975, July 1978 to current year. Published as "near Moran" prior to October 1968.

GAGE.--Water-stage recorder. Elevation of gage is 6,720 ft above National Geodetic Vertical Datum of 1929, from topographic map. July 31 to Nov. 11, 1906, nonrecording gage at site 0.4 mi downstream at different datum. July 20, 1917, to Sept. 30, 1918, nonrecording gage at site 0.1 mi downstream at different datum. Sept. 23, 1944, to Nov. 13, 1959, at site 100 ft upstream at same datum. Nov. 14, 1959, to Sept. 24, 1975, at site 35 ft downstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. No diversion or regulation.

AVERAGE DISCHARGE.--40 years (1944-75, 1979-87), 267 ft<sup>3</sup>/s, 21.45 in./yr, 193,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,350 ft<sup>3</sup>/s, May 29, 1983, gage height, 6.33 ft; minimum daily discharge, 19 ft<sup>3</sup>/s, Dec. 31, 1979.

EXTREMES FOR CURRENT YEAR.-- Peak discharges greater than base discharge of 1,300 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                  | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|---------|------|-----------------------------------|---------------------|---------------------------------------|------|-----------------------------------|---------------------|
| Apr. 30 | 0015 | *1150                             | *5.05               | No peaks greater than base discharge. |      |                                   |                     |

Minimum daily discharge, 35 ft<sup>3</sup>/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL    | AUG  | SEP  |
|-------------|-------|--------|------|------|------|------|-------|-------|-------|--------|------|------|
| 1           | e83   | 71     | e48  | e41  | e49  | e50  | 60    | 919   | 694   | 150    | 103  | e51  |
| 2           | e82   | 62     | e48  | e42  | e53  | e54  | e59   | 776   | 568   | 147    | 96   | e50  |
| 3           | e79   | 60     | e49  | e44  | e56  | e53  | e57   | 563   | 494   | 142    | 91   | e49  |
| 4           | e76   | 61     | e51  | e48  | e54  | e49  | 60    | 544   | 450   | 128    | 84   | e51  |
| 5           | e77   | 60     | e53  | e47  | e53  | e47  | 65    | 605   | 417   | 124    | 82   | 54   |
| 6           | e80   | 62     | e50  | e44  | e52  | e50  | 81    | 669   | 401   | 115    | 79   | 55   |
| 7           | e83   | 61     | e48  | e42  | e53  | e49  | 96    | 705   | 438   | 109    | 77   | 51   |
| 8           | e78   | 58     | e47  | e40  | e51  | e50  | 101   | e785  | 463   | 109    | 77   | 48   |
| 9           | e77   | 55     | e43  | e39  | e50  | e49  | 88    | e775  | 399   | 108    | 74   | 47   |
| 10          | e70   | e52    | e43  | e39  | e52  | e51  | 79    | e800  | 410   | 108    | 70   | 47   |
| 11          | e68   | e53    | e44  | e40  | e53  | e51  | 94    | e710  | 436   | 138    | 70   | 46   |
| 12          | e67   | 54     | e43  | e42  | e52  | e51  | 95    | e650  | 368   | 136    | 70   | 45   |
| 13          | e71   | e53    | e41  | e43  | e55  | e52  | 87    | e700  | 324   | 117    | 66   | 45   |
| 14          | e72   | e54    | e44  | e41  | e54  | e50  | 96    | e650  | 293   | 106    | 67   | 45   |
| 15          | e70   | e56    | e40  | e37  | e52  | e49  | 122   | 604   | 264   | 101    | 69   | 44   |
| 16          | e69   | e57    | e39  | e35  | e53  | e50  | 164   | 561   | 264   | 96     | 71   | 43   |
| 17          | e68   | e55    | e38  | e36  | e52  | e51  | 220   | 620   | 239   | 140    | 69   | 43   |
| 18          | e68   | e51    | e37  | e42  | e50  | e51  | 299   | 772   | 216   | 149    | 65   | 43   |
| 19          | e70   | e52    | e36  | e41  | e48  | e50  | 287   | 637   | 207   | 130    | 63   | 43   |
| 20          | e71   | e54    | e39  | e40  | e45  | e49  | 229   | 595   | 197   | 109    | 61   | 43   |
| 21          | 76    | e55    | e44  | e42  | e47  | e50  | 230   | 584   | 184   | 131    | 60   | 43   |
| 22          | 75    | e53    | e43  | e44  | e48  | e52  | 283   | 489   | 176   | 222    | 60   | 42   |
| 23          | 72    | e54    | e40  | e47  | e49  | e50  | 402   | 440   | 173   | 158    | e59  | 41   |
| 24          | 68    | 57     | e42  | e49  | e48  | e53  | 507   | 409   | 163   | 126    | e61  | 39   |
| 25          | 66    | e55    | e47  | e51  | e46  | e55  | 608   | 396   | 150   | 113    | e69  | 38   |
| 26          | 65    | e50    | e45  | e55  | e44  | e56  | 689   | 390   | 139   | 107    | e65  | 38   |
| 27          | 65    | e51    | e41  | e54  | e45  | e57  | 791   | 442   | 131   | e119   | e61  | 38   |
| 28          | 65    | 54     | e41  | e51  | e46  | e55  | 864   | 586   | 125   | e133   | e58  | 38   |
| 29          | 65    | 51     | e40  | e49  | ---  | e52  | 906   | 624   | 122   | e112   | e56  | 38   |
| 30          | 69    | e50    | e41  | e46  | ---  | e56  | 956   | 630   | 125   | e186   | e54  | 38   |
| 31          | 77    | ---    | e40  | e47  | ---  | e59  | ---   | 605   | ---   | e117   | e53  | ---  |
| TOTAL       | 2242  | 1671   | 1345 | 1358 | 1410 | 1601 | 8675  | 19235 | 9030  | 3986   | 2160 | 1336 |
| MEAN        | 72.3  | 55.7   | 43.4 | 43.8 | 50.4 | 51.6 | 289   | 620   | 301   | 129    | 69.7 | 44.5 |
| MAX         | 83    | 71     | 53   | 55   | 56   | 59   | 956   | 919   | 694   | 222    | 103  | 55   |
| MIN         | 65    | 50     | 36   | 35   | 44   | 47   | 57    | 390   | 122   | 96     | 53   | 38   |
| AC-FT       | 4450  | 3310   | 2670 | 2690 | 2800 | 3180 | 17210 | 38150 | 17910 | 7910   | 4280 | 2650 |
| CAL YR 1986 | TOTAL | 122016 | MEAN | 334  | MAX  | 3260 | MIN   | 23    | AC-FT | 242000 |      |      |
| WTR YR 1987 | TOTAL | 54049  | MEAN | 148  | MAX  | 956  | MIN   | 35    | AC-FT | 107200 |      |      |

e Estimated



## 13011900 BUFFALO FORK ABOVE LAVA CREEK, NEAR MORAN, WY

LOCATION.--Lat 43°50'14", long 110°26'21", in SE1/4 NE1/4 sec.29, T.45 N., R.113 W., Teton County, Hydrologic Unit 17040101, Grand Teton National Park, on right bank underneath bridge on U.S. Highway 26/287, about 2 mi upstream from Lava Creek, 3.5 mi east of Moran, and 4.0 mi upstream from mouth.

DRAINAGE AREA.--323 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1965 to current year. July to November 1906, July 1917 to September 1918, and September 1944 to September 1960 at sites about 3 mi downstream.

REVISED RECORDS.--WDR Idaho 1974: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,772.78 ft above National Geodetic Vertical Datum of 1929 (Federal Highway Administration bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--22 years (1966-87), 555 ft<sup>3</sup>/s, 23.71 in./yr, 402,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,540 ft<sup>3</sup>/s, June 9, 1981, gage height, 8.61 ft; minimum daily, 77 ft<sup>3</sup>/s, Feb. 5, 1982.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,100 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                  | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------------------------------------|------|-----------------------------------|---------------------|
| June 9 | 0700 | *2430                             | *4.85               | No peaks greater than base discharge. |      |                                   |                     |

Minimum daily, 98 ft<sup>3</sup>/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL    | AUG   | SEP   |
|-------------|-------|--------|------|------|------|------|-------|-------|-------|--------|-------|-------|
| 1           | 271   | 211    | e160 | e115 | e125 | e115 | e140  | 1090  | 1100  | 577    | 314   | 192   |
| 2           | 269   | 188    | e160 | e120 | e130 | e120 | e145  | 961   | 966   | 528    | 296   | 192   |
| 3           | 261   | 203    | e160 | e120 | e130 | e115 | e145  | 731   | 902   | 499    | 285   | 191   |
| 4           | 254   | 200    | e170 | e140 | e125 | e110 | 153   | 683   | 901   | 463    | 276   | 199   |
| 5           | 256   | 206    | e175 | e130 | e115 | e105 | 164   | 802   | 1090  | 443    | 269   | 205   |
| 6           | 266   | 215    | e170 | e115 | e115 | e115 | 190   | 971   | 1290  | 418    | 264   | 194   |
| 7           | 278   | 196    | e155 | e110 | e110 | e115 | 207   | 1150  | 1470  | 402    | 262   | 188   |
| 8           | 271   | 180    | e155 | e110 | e110 | e115 | 207   | 1260  | 1850  | 386    | 259   | 184   |
| 9           | 265   | e165   | e140 | e105 | e115 | e110 | 190   | 1270  | 2020  | 390    | 251   | 181   |
| 10          | 258   | e160   | e135 | e100 | e115 | e110 | 179   | 1290  | 1660  | 404    | 245   | 178   |
| 11          | 241   | e175   | e140 | e105 | e120 | e110 | 191   | 1310  | 1740  | 447    | 253   | 177   |
| 12          | 220   | e180   | e140 | e110 | e120 | e110 | 194   | 1270  | 1700  | 421    | 243   | 174   |
| 13          | 239   | e175   | e140 | e120 | e125 | e115 | 185   | 1460  | 1710  | 367    | 237   | 174   |
| 14          | 239   | e190   | e145 | e110 | e125 | e110 | 181   | 1550  | 1590  | 341    | 249   | 173   |
| 15          | 233   | e205   | e135 | e105 | e120 | e105 | 206   | 1640  | 1450  | 328    | 256   | 170   |
| 16          | 231   | e190   | e130 | e98  | e125 | e110 | 257   | 1460  | 1410  | 317    | 261   | 169   |
| 17          | 228   | e180   | e120 | e110 | e120 | e110 | 298   | 1710  | 1250  | 430    | 241   | 166   |
| 18          | 229   | e170   | e115 | e120 | e120 | e115 | 372   | 2010  | 1050  | 543    | 232   | 164   |
| 19          | 233   | e175   | e125 | e110 | e115 | e115 | 353   | 1730  | 1020  | 438    | 227   | 163   |
| 20          | 232   | e180   | e130 | e105 | e105 | e115 | 291   | 1440  | 878   | 370    | 223   | 163   |
| 21          | 251   | e180   | e125 | e110 | e110 | e115 | 285   | 1270  | 873   | 362    | 217   | 162   |
| 22          | 241   | e175   | e125 | e115 | e115 | e120 | 338   | 1080  | 829   | 468    | 217   | 160   |
| 23          | 233   | e175   | e145 | e120 | e120 | e120 | 455   | 960   | 749   | 390    | 214   | 159   |
| 24          | 224   | e185   | e135 | e125 | e115 | e125 | 560   | 903   | 683   | 350    | 222   | 157   |
| 25          | 220   | e180   | e125 | e130 | e105 | e130 | 649   | 855   | 667   | 331    | 258   | 158   |
| 26          | 217   | e165   | e125 | e135 | e105 | e135 | 702   | 834   | 646   | 321    | 237   | 157   |
| 27          | 217   | e170   | e130 | e130 | e105 | e135 | 826   | 847   | 617   | 309    | 222   | 156   |
| 28          | 218   | e180   | e120 | e125 | e105 | e130 | 946   | 949   | 604   | 371    | 214   | 155   |
| 29          | 212   | e170   | e115 | e120 | ---  | e125 | 1020  | 1040  | 564   | 341    | 206   | 155   |
| 30          | 222   | e165   | e120 | e115 | ---  | e130 | 972   | 1060  | 533   | 415    | 199   | 154   |
| 31          | 227   | ---    | e115 | e120 | ---  | e135 | ---   | 1050  | ---   | 338    | 195   | ---   |
| TOTAL       | 7456  | 5489   | 4280 | 3603 | 3265 | 3645 | 11001 | 36636 | 33812 | 12508  | 7544  | 5170  |
| MEAN        | 241   | 183    | 138  | 116  | 117  | 118  | 367   | 1182  | 1127  | 403    | 243   | 172   |
| MAX         | 278   | 215    | 175  | 140  | 130  | 135  | 1020  | 2010  | 2020  | 577    | 314   | 205   |
| MIN         | 212   | 160    | 115  | 98   | 105  | 105  | 140   | 683   | 533   | 309    | 195   | 154   |
| AC-FT       | 14790 | 10890  | 8490 | 7150 | 6480 | 7230 | 21820 | 72670 | 67070 | 24810  | 14960 | 10250 |
| CAL YR 1986 | TOTAL | 232577 | MEAN | 637  | MAX  | 4950 | MIN   | 82    | AC-FT | 461300 |       |       |
| WTR YR 1987 | TOTAL | 134409 | MEAN | 368  | MAX  | 2020 | MIN   | 98    | AC-FT | 266600 |       |       |

e Estimated



## FLAT CREEK BASIN

13018300 CACHE CREEK NEAR JACKSON, WY  
(Hydrologic bench-mark station)

LOCATION.--Lat 43°27'08", long 110°42'12", in SW1/4 SW1/4 SE1/4 sec.1, T.40 N., R.116 W., Teton County, Hydrologic Unit 17040103, Teton National Forest, on right bank 0.7 mi upstream from Salt Lick Draw, 2.4 mi southeast of Jackson, and 4.0 mi upstream from mouth.

DRAINAGE AREA.--10.6 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1962 to current year.

REVISED RECORDS.--WDR WY-76-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,750 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--25 years, 13.7 ft<sup>3</sup>/s, 17.55 in/yr, 9,930 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 225 ft<sup>3</sup>/s, June 24, 1971, gage height, 3.90 ft; maximum gage height, 3.97 ft, June 7, 1972; minimum daily discharge, 2.1 ft<sup>3</sup>/s, Jan. 1, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 52 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                  | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------------------------------------|------|-----------------------------------|---------------------|
| Dec. 4 | 1915 | ice jam                           | *2.84               | No peaks greater than base discharge. |      |                                   |                     |
| May 31 | 1900 | *36                               | 1.89                |                                       |      |                                   |                     |

Minimum daily discharge, 3.9 ft<sup>3</sup>/s, Dec. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY  | JUN   | JUL   | AUG   | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|
| 1           | 10    | 8.2    | e6.5  | 4.6   | e5.0  | 4.0   | e5.1  | 27   | 32    | 16    | 11    | 7.9   |
| 2           | 10    | 8.0    | e6.6  | 4.7   | e5.0  | 4.0   | e5.2  | 25   | 30    | 16    | 11    | 7.9   |
| 3           | 10    | 8.1    | e6.5  | 4.6   | e5.1  | 4.0   | e5.2  | 22   | 29    | 16    | 11    | 8.0   |
| 4           | 9.7   | 8.1    | e6.2  | 4.6   | e5.0  | 4.0   | e5.5  | 21   | 28    | 15    | 11    | 8.0   |
| 5           | 9.5   | 8.1    | e6.4  | 4.5   | e4.8  | 4.0   | e6.1  | 22   | 28    | 15    | 11    | 8.0   |
| 6           | 9.6   | 8.1    | e6.5  | 4.4   | e4.7  | 4.1   | e6.9  | 24   | 27    | 15    | 10    | 7.9   |
| 7           | 9.5   | 7.7    | 6.6   | 4.4   | e4.7  | 4.3   | 8.2   | 25   | 27    | 14    | 10    | 7.8   |
| 8           | 9.4   | 7.2    | 6.4   | 4.5   | e4.7  | 4.5   | 8.7   | 26   | 27    | 14    | 10    | 7.7   |
| 9           | 9.4   | 7.0    | e6.1  | 4.6   | e4.7  | 4.5   | 8.7   | 27   | 27    | 14    | 9.6   | 7.7   |
| 10          | 9.4   | e6.8   | e5.7  | 4.7   | e4.8  | 4.4   | 9.0   | 27   | 27    | 15    | 9.5   | 7.7   |
| 11          | 9.2   | e7.0   | e5.8  | 4.7   | 4.8   | 4.4   | 10    | 27   | 26    | 15    | 9.5   | 7.7   |
| 12          | 9.0   | e7.2   | e5.6  | 4.8   | 4.7   | 4.3   | 12    | 27   | 25    | 14    | 9.4   | 7.6   |
| 13          | 9.0   | e7.3   | e5.7  | 4.7   | 4.7   | 4.4   | 12    | 27   | 25    | 13    | 9.4   | 7.6   |
| 14          | 8.9   | 7.3    | e5.9  | 5.2   | 4.7   | 4.4   | 14    | 27   | 24    | 13    | 9.8   | 7.6   |
| 15          | 8.9   | 7.3    | e5.8  | 5.7   | 4.7   | 4.3   | 17    | 26   | 24    | 12    | 9.6   | 7.5   |
| 16          | 8.9   | 7.3    | e5.8  | 5.6   | 4.7   | 4.4   | 21    | 26   | 23    | 13    | 9.2   | 7.5   |
| 17          | 9.0   | 7.7    | e5.7  | 5.5   | 4.7   | e4.2  | 24    | 28   | 22    | 15    | 9.0   | 7.5   |
| 18          | 9.2   | 7.6    | e5.5  | 5.5   | 4.7   | e4.3  | 24    | 32   | 21    | 14    | 9.0   | 7.5   |
| 19          | 9.5   | 7.4    | e5.4  | 5.5   | e4.4  | e4.3  | 21    | 31   | 21    | 13    | 8.9   | 7.3   |
| 20          | 9.5   | 7.2    | e5.2  | 5.5   | e4.2  | e4.2  | 18    | 31   | 20    | 12    | 8.9   | 7.1   |
| 21          | 9.2   | 7.3    | 5.1   | 5.3   | e4.4  | e4.3  | 17    | 30   | 20    | 15    | 9.0   | 7.1   |
| 22          | 9.0   | 7.0    | 5.1   | 5.3   | e4.4  | e4.3  | 15    | 29   | 19    | 14    | 8.9   | 7.0   |
| 23          | 8.9   | e6.8   | 5.1   | 5.2   | e4.5  | e4.2  | 12    | 28   | 19    | 13    | 9.0   | 6.8   |
| 24          | 8.9   | 6.9    | 5.0   | 5.1   | e4.4  | e4.1  | 14    | 28   | 18    | 12    | 9.0   | 6.8   |
| 25          | 8.7   | 6.8    | 5.1   | 5.3   | e4.3  | e4.3  | 16    | 27   | 18    | 12    | 8.9   | 6.8   |
| 26          | 8.7   | e6.6   | 5.1   | 5.3   | 4.0   | e4.4  | 17    | 27   | 18    | 12    | 8.7   | 6.9   |
| 27          | 8.6   | e6.7   | 4.9   | 5.5   | e4.0  | e4.5  | 19    | 28   | 17    | 12    | 8.4   | 6.9   |
| 28          | 8.3   | 6.8    | 4.8   | 5.8   | e4.0  | e4.4  | 22    | 32   | 17    | 12    | 8.4   | 6.9   |
| 29          | 8.3   | 6.7    | 3.9   | 5.5   | ---   | e4.3  | 24    | 33   | 17    | 12    | 8.1   | 6.6   |
| 30          | 8.7   | e6.6   | 4.5   | 5.2   | ---   | e4.5  | 27    | 32   | 16    | 12    | 7.9   | 6.6   |
| 31          | 8.4   | ---    | 4.7   | e4.9  | ---   | e4.8  | ---   | 33   | ---   | 11    | 7.9   | ---   |
| TOTAL       | 283.3 | 218.8  | 173.2 | 156.7 | 128.8 | 133.1 | 424.6 | 855  | 692   | 421   | 291.0 | 221.9 |
| MEAN        | 9.14  | 7.29   | 5.59  | 5.05  | 4.60  | 4.29  | 14.2  | 27.6 | 23.1  | 13.6  | 9.39  | 7.40  |
| MAX         | 10    | 8.2    | 6.6   | 5.8   | 5.1   | 4.8   | 27    | 33   | 32    | 16    | 11    | 8.0   |
| MIN         | 8.3   | 6.6    | 3.9   | 4.4   | 4.0   | 4.0   | 5.1   | 21   | 16    | 11    | 7.9   | 6.6   |
| AC-FT       | 562   | 434    | 344   | 311   | 255   | 264   | 842   | 1700 | 1370  | 835   | 577   | 440   |
| CAL YR 1986 | TOTAL | 7395.7 | MEAN  | 20.3  | MAX   | 143   | MIN   | 3.8  | AC-FT | 14670 |       |       |
| WTR YR 1987 | TOTAL | 3999.4 | MEAN  | 11.0  | MAX   | 33    | MIN   | 3.9  | AC-FT | 7930  |       |       |

e Estimated

13018300 CACHE CREEK NEAR JACKSON, WY--Continued  
(Hydrologic benchmark station)

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>AIR<br>(DEG C) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CAC03) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|------------------------------------|--------------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------|----------------------------------------------|
| NOV<br>19... | 1326 | 7.6                                             | 308                                               | 8.4                            | 2.0                                | 2.0                                  | 10.8                                | 101                                                            | K8                                                             | K8                                                                 | 180                                    | 47                                           |
| JAN<br>14... | 1625 | 5.5                                             | 312                                               | 8.8                            | -6.0                               | 0.5                                  | 10.9                                | 98                                                             | K5                                                             | K4                                                                 | 180                                    | 47                                           |
| MAR<br>19... | 1600 | 4.4                                             | 321                                               | 8.1                            | 2.0                                | 1.0                                  | 10.9                                | 99                                                             | K16                                                            | K6                                                                 | 180                                    | 49                                           |
| MAY<br>28... | 1440 | 33                                              | 297                                               | 8.4                            | 8.0                                | 6.0                                  | 9.5                                 | 98                                                             | K6                                                             | K3                                                                 | 170                                    | 49                                           |
| JUL<br>15... | 1400 | 12                                              | 309                                               | 8.6                            | 23.0                               | 10.0                                 | 10.0                                | 99                                                             | 23                                                             | K13                                                                | 170                                    | 46                                           |
| SEP<br>18... | 0730 | 7.5                                             | 295                                               | 8.1                            | -4.0                               | 2.0                                  | 10.7                                | 98                                                             | K4                                                             | 63                                                                 | 180                                    | 47                                           |

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

| DATE         | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | BICAR-<br>BONATE<br>WATER<br>WHOLE<br>IT-FLD<br>(MG/L) | CAR-<br>BONATE<br>WATER<br>WHOLE<br>IT-FLD<br>(MG/L) | ALKA-<br>LINITY,<br>CARBON-<br>ATE<br>IT-FLD<br>(MG/L<br>CAC03) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) |
|--------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|
| NOV<br>19... | 15                                                   | 2.2                                          | 3                                                   | 0.9                                                    | 226                                                  | 0                                                               | 185                                           | 6.1                                                 | 1.0                                                | 0.1                                               | 185                                                                |
| JAN<br>14... | 15                                                   | 2.4                                          | 3                                                   | 0.5                                                    | 182                                                  | 21                                                              | 184                                           | 6.7                                                 | 0.7                                                | 0.1                                               | 176                                                                |
| MAR<br>19... | 15                                                   | 2.6                                          | 3                                                   | 0.6                                                    | 216                                                  | 0                                                               | 177                                           | 5.7                                                 | 1.1                                                | 0.1                                               | 188                                                                |
| MAY<br>28... | 12                                                   | 3.1                                          | 4                                                   | 0.9                                                    | 174                                                  | 19                                                              | 175                                           | 5.8                                                 | 0.8                                                | <0.1                                              | 183                                                                |
| JUL<br>15... | 14                                                   | 2.0                                          | 2                                                   | 0.6                                                    | 197                                                  | 7                                                               | 174                                           | 5.2                                                 | --                                                 | 0.1                                               | 170                                                                |
| SEP<br>18... | 14                                                   | 2.5                                          | 3                                                   | 0.7                                                    | 212                                                  | 0                                                               | 173                                           | 5.9                                                 | 0.6                                                | 0.1                                               | 176                                                                |

| DATE         | SOLIDS,<br>SUM OF<br>CONSTITUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | NITRO-<br>GEN,<br>NITRITE<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | PHOS-<br>PHORUS,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) |
|--------------|----------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------|----------------------------------------------------------------|
| NOV<br>19... | 190                                                            | 0.25                                                | 3.8                                               | <0.01                                                         | <0.1                                                          | 0.03                                                 | 0.08                                                          | 0.3                                                                | 0.06                                        | <0.01                                                | 0.01                                                           |
| JAN<br>14... | 190                                                            | 0.24                                                | 2.6                                               | <0.01                                                         | 0.1                                                           | 0.03                                                 | 0.03                                                          | 0.2                                                                | 0.03                                        | 0.02                                                 | 0.02                                                           |
| MAR<br>19... | 190                                                            | 0.26                                                | 2.2                                               | <0.01                                                         | <0.1                                                          | 0.03                                                 | 0.05                                                          | 0.3                                                                | 0.02                                        | 0.01                                                 | <0.01                                                          |
| MAY<br>28... | 180                                                            | 0.25                                                | 16                                                | <0.01                                                         | <0.1                                                          | 0.70                                                 | 0.06                                                          | 0.5                                                                | 0.12                                        | 0.07                                                 | 0.04                                                           |
| JUL<br>15... | --                                                             | --                                                  | --                                                | <0.01                                                         | <0.1                                                          | 0.03                                                 | 0.07                                                          | <0.2                                                               | 0.04                                        | 0.03                                                 | 0.06                                                           |
| SEP<br>18... | 180                                                            | 0.24                                                | 3.6                                               | <0.01                                                         | <0.1                                                          | 0.02                                                 | 0.03                                                          | 0.5                                                                | 0.03                                        | 0.02                                                 | 0.03                                                           |

## FLAT CREEK BASIN

13018300 CACHE CREEK NEAR JACKSON, WY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | ALUM-<br>INUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AL) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BERYL-<br>LIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BE) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) | COBALT,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CO) | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) |
|--------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|--------------------------------------------|
| NOV<br>19... | <10                                                 | <1                                           | 31                                           | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 2                                            | 7                                          | <5                                         |
| MAR<br>19... | 10                                                  | <1                                           | 36                                           | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 1                                            | 7                                          | <5                                         |
| MAY<br>28... | 80                                                  | <1                                           | 49                                           | 2                                                    | 1                                            | 3                                                   | <3                                           | 4                                            | 55                                         | <5                                         |
| SEP<br>18... | <10                                                 | <1                                           | 30                                           | <0.5                                                 | <1                                           | <1                                                  | <3                                           | 3                                            | 7                                          | <5                                         |

| DATE         | LITHIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS LI) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | STRON-<br>TIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SR) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|--------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------------|--------------------------------------------|
| NOV<br>19... | 6                                            | <1                                                   | 0.1                                          | <10                                                   | 1                                            | <1                                                  | <1                                           | 60                                                   | <6                                                 | 7                                          |
| MAR<br>19... | 5                                            | 1                                                    | 0.3                                          | <10                                                   | <1                                           | <1                                                  | 1                                            | 64                                                   | <6                                                 | 7                                          |
| MAY<br>28... | 8                                            | 5                                                    | 1.0                                          | <10                                                   | <1                                           | <1                                                  | <1                                           | 87                                                   | <6                                                 | 16                                         |
| SEP<br>18... | <4                                           | <1                                                   | 0.1                                          | <10                                                   | 3                                            | <1                                                  | <1                                           | 57                                                   | <6                                                 | 7                                          |

| DATE         | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS<br>CS-137) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | GROSS<br>BETA,<br>SUSP.<br>TOTAL<br>(PCI/L<br>AS SR/<br>YT-90) | RADIUM<br>226,<br>DIS-<br>SOLVED,<br>RADON<br>METHOD<br>(PCI/L) | URANIUM<br>DIS-<br>SOLVED,<br>EXTRAC-<br>TION<br>(UG/L) |
|--------------|------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------|
| JUN<br>05... | 0.7                                                        | <0.4                                              | 0.7                                                         | <0.4                                                        | 0.5                                                            | <0.4                                                           | 0.09                                                            | 0.39                                                    |

| DATE         | SEDI-<br>MENT,<br>DIS-<br>SUS-<br>PENDE<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|--------------|---------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| NOV<br>19... | 57                                                | 1.2                                                           | 82                                                            |
| JAN<br>14... | 102                                               | 1.5                                                           | 55                                                            |
| MAR<br>19... | 29                                                | 0.34                                                          | 51                                                            |
| MAY<br>28... | 61                                                | 5.4                                                           | 79                                                            |
| JUL<br>15... | 8                                                 | 0.27                                                          | 68                                                            |
| SEP<br>18... | 7                                                 | 0.14                                                          | 70                                                            |

## 13018750 SNAKE RIVER BELOW FLAT CREEK, NEAR JACKSON, WY

LOCATION.--Lat 43°22'20", long 110°44'17", in NE1/4 SE1/4 sec.3, T.39 N., R.116 W., Teton County, Hydrologic Unit 17040103, on left bank 20 ft upstream from county road bridge, about 1 mi downstream from Flat Creek, 4.8 mi upstream from Hoback River, 7.0 mi south of Jackson, and at mile 938.9.

DRAINAGE AREA.--2,627 mi<sup>2</sup>.

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

GAGE.--Water-stage recorder. Elevation of gage is 5,950 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for periods of estimated discharges, which are fair.

AVERAGE DISCHARGE.--11 years (1977-87), 3,758 ft<sup>3</sup>/s, 2,723,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,600 ft<sup>3</sup>/s, June 6, 1986, gage height, 10.22 ft; minimum daily, 780 ft<sup>3</sup>/s, Dec. 31, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,800 ft<sup>3</sup>/s, May 19, gage height, 6.34 ft; minimum, 870 ft<sup>3</sup>/s, Mar. 29-31, gage height, 1.51 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT           | NOV       | DEC       | JAN      | FEB           | MAR   | APR    | MAY    | JUN    | JUL    | AUG    | SEP    |
|-------------|---------------|-----------|-----------|----------|---------------|-------|--------|--------|--------|--------|--------|--------|
| 1           | e2600         | e2250     | 1940      | e1340    | e1270         | 981   | 939    | 5200   | 7380   | 3420   | 3390   | 2730   |
| 2           | e2550         | e2180     | 1900      | e1410    | e1310         | 977   | 1010   | 5370   | 7080   | 3780   | 3280   | 2700   |
| 3           | e2500         | e2080     | 1870      | e1400    | e1320         | 974   | 1020   | 4580   | 6330   | 3950   | 3190   | 2710   |
| 4           | e2450         | e2020     | 1840      | e1420    | e1260         | 941   | 1070   | 3900   | 5600   | 3880   | 3140   | 2720   |
| 5           | e2400         | e1980     | 1800      | e1450    | e1190         | 940   | 1200   | 3800   | 5400   | 3820   | 3100   | 2760   |
| 6           | e2360         | e2030     | 1780      | e1400    | e1240         | 934   | 1390   | 4060   | 5460   | 3720   | 3080   | 2760   |
| 7           | e2350         | e2040     | 1710      | e1320    | e1390         | 947   | 1610   | 4520   | 5940   | 3610   | 3020   | 2740   |
| 8           | e2340         | e2000     | 1670      | e1270    | 1460          | 1000  | 1680   | 4900   | 6490   | 3620   | 3000   | 2690   |
| 9           | e2320         | e1960     | 1620      | e1180    | 1490          | 1060  | 1640   | 4990   | 7280   | 3610   | 2990   | 2660   |
| 10          | e2300         | e1880     | e1700     | e1160    | e1400         | 1060  | 1530   | 4980   | 7340   | 3720   | 2940   | 2650   |
| 11          | e2280         | e1800     | e1600     | e1170    | 1470          | 1070  | 1540   | 5100   | 7490   | 3820   | 2930   | 2640   |
| 12          | e2250         | e1900     | e1500     | e1180    | 1400          | 1030  | 1580   | 5800   | 7350   | 3790   | 2820   | 2620   |
| 13          | e2230         | e1880     | e1460     | e1200    | 1340          | 1030  | 1520   | 6500   | 7100   | 3700   | 2770   | 2610   |
| 14          | e2220         | e1910     | e1550     | e1140    | 1260          | 1050  | 1470   | 7130   | 6880   | 3610   | 2810   | 2580   |
| 15          | e2190         | e1950     | 1570      | e1100    | 1180          | 1030  | 1500   | 7380   | 6530   | 3550   | 2850   | 2600   |
| 16          | e2170         | e2010     | e1520     | e1060    | 1150          | 999   | 1630   | 7790   | 5960   | 3540   | 2840   | 2600   |
| 17          | e2130         | e2060     | e1460     | e1100    | 1130          | 1010  | 1840   | 8080   | 5710   | 3870   | 2800   | 2520   |
| 18          | e2120         | e1960     | e1400     | e1150    | 1120          | 1040  | 2070   | 9390   | 5370   | 4250   | 2740   | 2500   |
| 19          | e2250         | e2000     | e1450     | e1130    | 1130          | 1030  | 2220   | 10600  | 5120   | 4170   | 2690   | 2470   |
| 20          | 2300          | 1960      | e1480     | e1110    | 1100          | 995   | 2090   | 9890   | 4600   | 3970   | 2690   | 2440   |
| 21          | e2280         | 1930      | e1440     | e1130    | 1110          | 962   | 1880   | 9670   | 4310   | 4090   | 2690   | 2390   |
| 22          | e2200         | 1980      | e1400     | e1170    | 1140          | 981   | 1880   | 8090   | 4200   | 4440   | 2700   | 2340   |
| 23          | e2180         | 1950      | e1520     | e1200    | 1140          | 996   | 2140   | 7420   | 4130   | 4390   | 2710   | 2260   |
| 24          | e2120         | 1920      | e1460     | e1220    | 1120          | 970   | 2580   | 7030   | 3820   | 4130   | 2800   | 2220   |
| 25          | e2100         | 2000      | e1400     | e1260    | 1130          | 962   | 3030   | 6840   | 3540   | 3930   | 3030   | 2180   |
| 26          | e2080         | 2010      | e1370     | e1300    | 1090          | 960   | 3400   | 6700   | 3430   | 3800   | 3060   | 2140   |
| 27          | e2070         | 1980      | e1340     | e1340    | 1050          | 938   | e3800  | 6280   | 3340   | 3650   | 3000   | 2090   |
| 28          | e2080         | 1970      | e1320     | e1280    | 1030          | 917   | e4200  | 6470   | 3240   | 3550   | 2920   | 2060   |
| 29          | e2100         | 2000      | e1260     | e1260    | ---           | 910   | e4500  | 6560   | 3180   | 3600   | 2870   | 1770   |
| 30          | e2200         | 2030      | e1320     | e1240    | ---           | 881   | 4970   | 6850   | 3180   | 3630   | 2810   | 1510   |
| 31          | e2300         | ---       | e1300     | e1250    | ---           | 883   | ---    | 6840   | ---    | 3540   | 2760   | ---    |
| TOTAL       | 70020         | 59620     | 47950     | 38340    | 34420         | 30458 | 62929  | 202710 | 162780 | 118150 | 90420  | 73660  |
| MEAN        | 2259          | 1987      | 1547      | 1237     | 1229          | 983   | 2098   | 6539   | 5426   | 3811   | 2917   | 2455   |
| MAX         | 2600          | 2250      | 1940      | 1450     | 1490          | 1070  | 4970   | 10600  | 7490   | 4440   | 3390   | 2760   |
| MIN         | 2070          | 1800      | 1260      | 1060     | 1030          | 881   | 939    | 3800   | 3180   | 3420   | 2690   | 1510   |
| AC-FT       | 138900        | 118300    | 95110     | 76050    | 68270         | 60410 | 124800 | 402100 | 322900 | 234400 | 179300 | 146100 |
| CAL YR 1986 | TOTAL 1851660 | MEAN 5073 | MAX 24900 | MIN 1130 | AC-FT 3673000 |       |        |        |        |        |        |        |
| WTR YR 1987 | TOTAL 991457  | MEAN 2716 | MAX 10600 | MIN 881  | AC-FT 1967000 |       |        |        |        |        |        |        |

e Estimated

## 13019438 LITTLE GRANITE CREEK AT MOUTH NEAR BONDURANT, WY

LOCATION.--Lat 43°17'56", long 110°31'33", NW1/4 SW1/4 sec.34, T.39 N., R.114 W., Teton County, Hydrologic Unit 17040103, Teton National Forest, 11.3 mi east of Hoback Junction on U.S. 187/189 and 1.4 mi northeast of U.S. 187/189 on Granite Creek Road.

DRAINAGE AREA.--21.1 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1981 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,390 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No diversion upstream from station.

AVERAGE DISCHARGE.--5 years, 36.2 ft<sup>3</sup>/s, 23.30 in/yr, 26,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 876 ft<sup>3</sup>/s, May 29, 1983, gage height, 3.86 ft, maximum gage height, 4.1 ft, Feb. 25, 1982 (backwater from ice); minimum daily, 2.5 ft<sup>3</sup>/s, Feb. 5, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 122 ft<sup>3</sup>/s, May 28, gage height, 2.58 ft; minimum daily, 5.5 ft<sup>3</sup>/s, Dec. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR    | MAY  | JUN  | JUL  | AUG   | SEP   |
|-------|-------|-------|-------|-------|-------|-------|--------|------|------|------|-------|-------|
| 1     | 10    | e8.4  | e7.4  | e5.8  | e6.1  | 5.9   | 8.7    | 103  | 93   | 23   | 18    | 9.4   |
| 2     | 11    | e8.4  | e7.5  | e5.8  | e6.2  | 5.9   | e8.6   | 96   | 83   | 22   | 16    | 9.5   |
| 3     | 11    | e8.4  | e7.4  | e5.9  | e6.2  | 5.9   | e8.5   | 82   | 75   | 22   | 16    | 9.7   |
| 4     | 10    | e8.4  | e7.3  | e6.0  | e6.0  | 5.9   | e11    | 77   | 69   | 22   | 15    | 10    |
| 5     | 10    | e8.3  | e7.2  | e6.1  | 5.8   | 6.1   | e12    | 78   | 67   | 21   | 14    | 10    |
| 6     | 10    | e8.3  | e7.3  | e6.0  | 5.9   | 6.4   | e14    | 85   | 63   | 21   | 14    | 9.3   |
| 7     | 10    | e8.2  | 7.3   | e5.8  | 5.9   | 6.6   | e16    | 85   | 61   | 21   | 14    | 9.1   |
| 8     | 10    | e8.1  | 7.5   | e5.8  | 6.1   | 7.2   | 19     | 86   | 57   | 20   | 14    | 9.2   |
| 9     | 9.9   | e7.9  | e7.1  | e5.8  | 6.0   | 6.9   | 20     | 82   | 54   | 21   | 14    | 9.2   |
| 10    | 9.7   | e7.8  | e6.8  | e6.0  | 6.1   | 6.5   | 21     | 79   | 54   | 27   | 13    | 9.2   |
| 11    | 9.5   | e7.8  | e6.9  | e6.1  | 6.1   | 6.6   | 22     | 74   | 52   | 25   | 13    | 9.2   |
| 12    | 9.5   | e7.9  | e7.0  | e6.2  | 6.3   | 6.2   | 22     | 69   | 49   | 22   | 13    | 9.2   |
| 13    | 9.1   | e8.0  | e7.1  | e6.2  | 6.6   | 6.3   | 23     | 65   | 45   | 21   | 12    | 9.1   |
| 14    | 8.8   | e8.0  | e7.3  | e6.1  | 6.4   | 6.6   | 25     | 62   | 42   | 20   | 15    | 8.9   |
| 15    | 8.6   | e8.1  | e7.4  | e6.1  | 6.2   | 6.2   | 31     | 60   | 40   | 20   | 14    | 8.9   |
| 16    | 8.6   | e8.1  | e7.0  | e6.2  | 6.1   | 6.3   | 38     | 61   | 38   | 19   | 13    | 8.8   |
| 17    | 8.4   | e8.3  | e6.7  | e6.2  | 6.2   | 6.1   | 45     | 69   | 36   | 22   | 12    | 8.4   |
| 18    | 8.8   | e8.2  | e6.6  | e6.2  | 6.1   | 6.1   | 46     | 75   | 34   | 21   | 11    | 8.4   |
| 19    | 10    | e8.0  | e6.5  | e6.1  | 6.1   | e6.0  | 44     | 69   | 31   | 20   | 11    | 8.4   |
| 20    | 10    | e7.8  | e6.4  | e6.0  | 6.0   | e5.8  | 39     | 68   | 31   | 20   | 10    | 8.3   |
| 21    | 9.7   | 7.9   | e6.2  | e6.2  | 6.0   | e6.0  | 39     | 71   | 30   | 21   | 11    | 8.2   |
| 22    | 9.3   | e7.6  | e6.2  | e6.2  | 5.9   | e6.4  | 46     | 67   | 30   | 21   | 11    | 8.2   |
| 23    | 9.0   | e7.5  | e6.1  | e6.2  | 6.1   | e6.3  | 56     | 67   | 29   | 19   | 11    | 8.2   |
| 24    | 8.7   | e7.6  | e6.0  | e6.2  | 6.1   | e6.1  | 65     | 69   | 28   | 19   | 11    | 8.2   |
| 25    | 8.7   | 7.7   | e6.2  | e6.1  | 6.1   | e6.2  | 71     | 69   | 27   | 18   | 11    | 8.2   |
| 26    | 8.7   | e7.4  | e6.2  | e6.4  | 5.9   | e6.4  | 83     | 70   | 25   | 18   | 11    | 8.2   |
| 27    | 8.4   | e7.5  | e6.0  | e6.8  | 6.1   | e6.6  | 91     | 77   | 24   | 17   | 10    | 8.0   |
| 28    | 8.4   | e7.6  | e5.8  | e7.2  | 6.1   | 6.3   | 97     | 111  | 24   | 17   | 10    | 7.9   |
| 29    | 8.4   | e7.7  | e5.5  | e6.5  | ---   | e6.2  | 100    | 107  | 24   | 19   | 10    | 7.9   |
| 30    | 8.4   | 7.6   | e5.8  | 6.1   | ---   | e7.5  | 100    | 101  | 24   | 19   | 9.7   | 7.9   |
| 31    | e8.3  | ---   | e6.0  | e6.1  | ---   | e8.4  | ---    | 98   | ---  | 18   | 9.7   | ---   |
| TOTAL | 288.9 | 238.5 | 207.7 | 190.4 | 170.7 | 197.9 | 1221.8 | 2432 | 1339 | 636  | 387.4 | 263.1 |
| MEAN  | 9.32  | 7.95  | 6.70  | 6.14  | 6.10  | 6.38  | 40.7   | 78.5 | 44.6 | 20.5 | 12.5  | 8.77  |
| MAX   | 11    | 8.4   | 7.5   | 7.2   | 6.6   | 8.4   | 100    | 111  | 93   | 27   | 18    | 10    |
| MIN   | 8.3   | 7.4   | 5.5   | 5.8   | 5.8   | 5.8   | 8.5    | 60   | 24   | 17   | 9.7   | 7.9   |
| AC-FT | 573   | 473   | 412   | 378   | 339   | 393   | 2420   | 4820 | 2660 | 1260 | 768   | 522   |

CAL YR 1986 TOTAL 18279.5 MEAN 50.1 MAX 558 MIN 4.3 AC-FT 36260  
WTR YR 1987 TOTAL 7573.4 MEAN 20.7 MAX 111 MIN 5.5 AC-FT 15020

e Estimated

13019438 LITTLE GRANITE CREEK AT MOUTH, NEAR BONDURANT, WY--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1981 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED SEDIMENT DISCHARGE: December 1981 to September 1985.

INSTRUMENTATION.--PS-69 automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS: Maximum daily, 3,150 mg/L, May 16, 1984; minimum daily, 2 mg/L, Dec. 11, 1981.

SEDIMENT LOADS: Maximum daily, 2,130 tons, May 16, 1984; minimum daily, 0.02 tons, Dec. 11, 1981.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | TEMPER-<br>ATURE<br>AIR<br>(DEG C) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) |
|--------------|------|-------------------------------------------------|---------------------------------------------------|--------------------------------|------------------------------------|--------------------------------------|-------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| NOV<br>20... | 1230 | 8.4                                             | 438                                               | 8.2                            | -1.0                               | 0.0                                  | 11.2                                | 96                                                             | K10                                                            |
| DEC<br>17... | 0930 | 6.1                                             | 397                                               | --                             | -20.0                              | 0.0                                  | --                                  | --                                                             | --                                                             |
| FEB<br>11... | 1230 | 6.2                                             | 491                                               | --                             | 6.0                                | 0.0                                  | --                                  | --                                                             | --                                                             |
| MAR<br>19... | 1300 | 8.4                                             | 475                                               | 8.3                            | 1.0                                | 0.0                                  | 11.4                                | 100                                                            | K4                                                             |
| APR<br>08... | 0940 | 20                                              | 444                                               | --                             | 4.0                                | 2.0                                  | --                                  | --                                                             | --                                                             |
| MAY<br>07... | 1216 | 84                                              | 344                                               | --                             | 11.0                               | 7.0                                  | --                                  | --                                                             | --                                                             |
| 13...        | 1045 | 62                                              | 327                                               | --                             | 19.0                               | 8.0                                  | --                                  | --                                                             | --                                                             |
| 22...        | 1000 | 66                                              | 342                                               | --                             | 10.0                               | 5.0                                  | --                                  | --                                                             | --                                                             |
| 28...        | 1140 | 106                                             | 346                                               | 8.4                            | 7.0                                | 5.0                                  | 10.1                                | 100                                                            | 37                                                             |
| JUN<br>03... | 1150 | 74                                              | 344                                               | --                             | 15.0                               | 7.0                                  | --                                  | --                                                             | --                                                             |
| 10...        | 1045 | 57                                              | 358                                               | --                             | --                                 | 7.5                                  | --                                  | --                                                             | --                                                             |
| JUL<br>15... | 1030 | 20                                              | 392                                               | --                             | 18.0                               | 8.0                                  | --                                  | --                                                             | --                                                             |
| AUG<br>19... | 1115 | 11                                              | 389                                               | --                             | 16.0                               | 8.0                                  | --                                  | --                                                             | --                                                             |
| SEP<br>17... | 1630 | 8.4                                             | 425                                               | 8.3                            | 20.0                               | 11.0                                 | 8.9                                 | 101                                                            | K2                                                             |

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

| DATE         | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | PERCENT<br>SODIUM | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | BICAR-<br>BONATE<br>WATER<br>WHOLE<br>IT-FLD<br>(MG/L) |
|--------------|--------------------------------------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-------------------|-----------------------------------------|-----------------------------------------------------|--------------------------------------------------------|
| NOV<br>20... | K4                                                                 | 250                                    | 73                                           | 16                                                   | 4.2                                          | 4                 | 0.1                                     | 1.0                                                 | 244                                                    |
| MAR<br>19... | K1                                                                 | 250                                    | 75                                           | 16                                                   | 4.8                                          | 4                 | 0.1                                     | 0.9                                                 | 234                                                    |
| MAY<br>28... | 26                                                                 | 190                                    | 59                                           | 11                                                   | 2.9                                          | 3                 | 0.1                                     | 1.3                                                 | 174                                                    |
| SEP<br>17... | K6                                                                 | 210                                    | 63                                           | 14                                                   | 3.9                                          | 4                 | 0.1                                     | 1.1                                                 | 225                                                    |

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



## HOBACK RIVER BASIN

13019438 LITTLE GRANITE CREEK AT MOUTH, NEAR BONDURANT, WY--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | CAR-<br>BONATE<br>WATER<br>WHOLE<br>IT-FLD<br>(MG/L) | ALKA-<br>LINITY,<br>CARBON-<br>ATE<br>IT-FLD<br>(MG/L<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|--------------|------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|
| NOV<br>20... | 0                                                    | 200                                                             | 55                                            | 0.9                                                 | <0.1                                               | 4.8                                               | 270                                                                 | <0.1                                                          | <0.01                                       |
| MAR<br>19... | 0                                                    | 192                                                             | 80                                            | 1.5                                                 | 0.1                                                | 4.8                                               | 300                                                                 | <0.1                                                          | 0.01                                        |
| MAY<br>28... | 13                                                   | 165                                                             | 17                                            | 0.7                                                 | 0.1                                                | 4.8                                               | 190                                                                 | <0.1                                                          | 0.37                                        |
| SEP<br>17... | 0                                                    | 185                                                             | 48                                            | 0.4                                                 | 0.1                                                | 6.1                                               | 250                                                                 | <0.1                                                          | <0.01                                       |

## SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | SEDI-<br>MENT,<br>SUS-<br>PENDE<br>(MG/L) | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDE<br>(T/DAY) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|--------------|------|-------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| NOV<br>20... | 1230 | 86                                        | 2.0                                                           | 60                                                            |
| MAR<br>19... | 1300 | 16                                        | 0.36                                                          | 58                                                            |
| MAY<br>07... | 1216 | 65                                        | 15                                                            | 81                                                            |
| 13...        | 1045 | 43                                        | 7.2                                                           | 84                                                            |
| 22...        | 1000 | 81                                        | 14                                                            | 84                                                            |
| 28...        | 1140 | 274                                       | 78                                                            | 92                                                            |
| JUN<br>03... | 1150 | 40                                        | 8.0                                                           | 87                                                            |
| JUL<br>15... | 1030 | 9                                         | 0.49                                                          | 52                                                            |
| SEP<br>17... | 1630 | 4                                         | 0.09                                                          | 33                                                            |

## 13022500 SNAKE RIVER ABOVE RESERVOIR, NEAR ALPINE, WY

LOCATION.--Lat 43°11'47", long 110°53'18", Lincoln County, Hydrologic Unit 17040103, on right bank 0.3 mi downstream from Wolf Creek, 6.4 mi upstream from Greys River, 7.4 mi east of Alpine, 16.1 mi upstream from Palisades Dam, and at mile 917.5.

DRAINAGE AREA.--3,465 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1937 to March 1939 (published as "above Greys River, near Alpine"), July 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5,683.90 ft above National Geodetic Vertical Datum of 1929. Mar. 16, 1937, to Mar. 31, 1939, at site 6.0 mi downstream at different datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--35 years (1938, 1954-87), 4,644 ft<sup>3</sup>/s, 3,365,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,300 ft<sup>3</sup>/s, June 6, 1986; minimum, 740 ft<sup>3</sup>/s, Nov. 16, 1955, gage height, 2.19 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,300 ft<sup>3</sup>/s, May 19, gage height, 8.00 ft; minimum, 1,190 ft<sup>3</sup>/s, Mar. 29, gage height, 2.62 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT                                                      | NOV    | DEC    | JAN   | FEB   | MAR   | APR    | MAY    | JUN    | JUL    | AUG    | SEP    |
|-------------|----------------------------------------------------------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| 1           | 3530                                                     | 2930   | 2440   | e1700 | e1600 | 1410  | 1380   | 7870   | 9280   | 4290   | 3960   | 3180   |
| 2           | 3430                                                     | 2840   | 2380   | e1750 | e1650 | 1390  | 1490   | 7910   | 8930   | 4600   | 3820   | 3150   |
| 3           | 3360                                                     | 2790   | e2350  | e1740 | e1630 | 1370  | 1560   | 6790   | 8090   | 4810   | 3700   | 3160   |
| 4           | 3290                                                     | 2670   | e2250  | e1780 | 1470  | 1330  | 1660   | 5830   | 7270   | 4700   | 3610   | 3170   |
| 5           | 3250                                                     | 2560   | e2240  | e1800 | 1470  | 1330  | 1830   | 5710   | 7060   | 4630   | 3560   | 3210   |
| 6           | 3220                                                     | 2580   | e2210  | e1740 | 1550  | 1360  | 2170   | 6060   | 7120   | 4510   | 3530   | 3170   |
| 7           | 3200                                                     | 2600   | e2200  | e1680 | 1720  | 1390  | 2550   | 6660   | 7750   | 4370   | 3490   | 3120   |
| 8           | 3180                                                     | 2560   | 2200   | e1610 | 1860  | 1470  | 2680   | 7120   | 8330   | 4360   | 3500   | 3080   |
| 9           | 3160                                                     | 2480   | 2090   | e1520 | 1870  | 1540  | 2560   | 7210   | 9060   | 4380   | 3470   | 3020   |
| 10          | 3130                                                     | 2410   | 2150   | e1440 | 1770  | 1530  | 2380   | 7300   | 9160   | 4590   | 3440   | 2990   |
| 11          | 3120                                                     | 2330   | e2100  | e1450 | 1860  | 1530  | 2580   | 7330   | 9180   | 5040   | 3450   | 2970   |
| 12          | 3040                                                     | 2390   | e1950  | e1460 | 1810  | 1460  | 2620   | 7890   | 9020   | 4820   | 3370   | 2970   |
| 13          | 3000                                                     | 2360   | e1900  | e1470 | 1750  | 1450  | 2440   | 8550   | 8740   | 4610   | 3280   | 2940   |
| 14          | 2990                                                     | 2380   | e1950  | e1440 | 1700  | 1490  | 2490   | 9190   | 8490   | 4420   | 3370   | 2900   |
| 15          | 2970                                                     | 2470   | e1860  | e1380 | 1570  | 1450  | 2800   | 9510   | 8140   | 4320   | 3520   | 2920   |
| 16          | 2940                                                     | 2530   | e1820  | e1320 | 1570  | 1430  | 3370   | 9870   | 7560   | 4270   | 3500   | 2910   |
| 17          | 2910                                                     | 2650   | e1780  | e1390 | 1530  | 1440  | 3770   | 10600  | 7130   | 4610   | 3370   | 2840   |
| 18          | 2920                                                     | 2500   | e1760  | e1450 | 1520  | 1490  | 4100   | 12000  | 6690   | 5060   | 3310   | 2790   |
| 19          | 3090                                                     | 2580   | e1800  | e1400 | 1530  | 1460  | 4130   | 13000  | 6360   | 5030   | 3250   | 2740   |
| 20          | 3090                                                     | 2550   | e1860  | e1380 | 1510  | 1400  | 3590   | 12100  | 5850   | 4750   | 3250   | 2700   |
| 21          | 3080                                                     | 2550   | e1800  | e1420 | 1480  | 1360  | 3190   | 11800  | 5450   | 4780   | 3240   | 2660   |
| 22          | 3060                                                     | 2580   | e1760  | e1450 | 1510  | 1350  | 3310   | 10200  | 5300   | 5530   | 3300   | 2600   |
| 23          | 2990                                                     | 2500   | e1900  | e1480 | 1580  | 1350  | 3780   | 9330   | 5180   | 5290   | 3280   | 2530   |
| 24          | 2950                                                     | 2520   | e1820  | e1530 | 1550  | 1340  | 4440   | 8840   | 4840   | 4910   | 3390   | 2490   |
| 25          | 2930                                                     | 2580   | e1740  | e1580 | 1550  | 1350  | 5020   | 8540   | 4500   | 4610   | 3630   | 2430   |
| 26          | 2890                                                     | 2520   | e1690  | e1640 | 1480  | 1350  | 5520   | 8390   | 4370   | 4480   | 3650   | 2410   |
| 27          | 2850                                                     | 2500   | e1660  | e1680 | 1440  | 1330  | 6130   | 8200   | 4260   | 4310   | 3530   | 2380   |
| 28          | 2860                                                     | 2530   | e1620  | e1610 | 1420  | 1320  | 6940   | 8850   | 4140   | 4130   | 3430   | 2350   |
| 29          | 2820                                                     | 2600   | e1580  | e1570 | ---   | 1280  | 7360   | 8750   | 4090   | 4210   | 3380   | 2130   |
| 30          | 2890                                                     | 2600   | e1650  | e1530 | ---   | 1280  | 7530   | 8920   | 4130   | 4250   | 3300   | 1840   |
| 31          | 3030                                                     | ---    | e1620  | e1560 | ---   | 1300  | ---    | 8880   | ---    | 4140   | 3240   | ---    |
| TOTAL       | 95170                                                    | 76640  | 60130  | 47950 | 44950 | 43330 | 105370 | 269200 | 205470 | 142810 | 107120 | 83750  |
| MEAN        | 3070                                                     | 2555   | 1940   | 1547  | 1605  | 1398  | 3512   | 8684   | 6849   | 4607   | 3455   | 2792   |
| MAX         | 3530                                                     | 2930   | 2440   | 1800  | 1870  | 1540  | 7530   | 13000  | 9280   | 5530   | 3960   | 3210   |
| MIN         | 2820                                                     | 2330   | 1580   | 1320  | 1420  | 1280  | 1380   | 5710   | 4090   | 4130   | 3240   | 1840   |
| AC-FT       | 188800                                                   | 152000 | 119300 | 95110 | 89160 | 85950 | 209000 | 534000 | 407500 | 283300 | 212500 | 166100 |
| CAL YR 1986 | TOTAL 2388520 MEAN 6544 MAX 31300 MIN 1300 AC-FT 4738000 |        |        |       |       |       |        |        |        |        |        |        |
| WTR YR 1987 | TOTAL 1281890 MEAN 3512 MAX 13000 MIN 1280 AC-FT 2543000 |        |        |       |       |       |        |        |        |        |        |        |

e Estimated

## 13023000 GREYS RIVER ABOVE RESERVOIR, NEAR ALPINE, WY

LOCATION.--Lat 43°08'35", long 110°58'34", in SW1/4 SE1/4 sec.34, T.37 N., R.118 W. (unsurveyed), Lincoln County, Hydrologic Unit 17040103, on right bank at Bridge Campground, 3.6 mi southeast of Alpine, 3.0 mi upstream from maximum flowline of Palisades Reservoir.

DRAINAGE AREA.--448 mi<sup>2</sup>. Mean elevation, 8,080 ft.

PERIOD OF RECORD.--July to September 1917, June to September 1918, March 1937 to March 1939, October 1953 to current year. Published as "Greys River near Alpine, Idaho," 1917-18, and as "Greys River near Alpine, Wyo.," 1937-39.

REVISED RECORDS.--WDR Idaho 1967: 1966.

GAGE.--Water-stage recorder. Elevation of gage is 5,720 ft above National Geodetic Vertical Datum of 1929, from topographic map. July 6 to Sept. 30, 1917, and June 4 to Sept. 30, 1918, nonrecording gage, and Mar. 17, 1937, to Mar. 31, 1939, water-stage recorder, at site 1.8 mi downstream, and October 1953 to Sept. 22, 1965, water-stage recorder at site 1 mi downstream at different datums.

REMARKS.--Records good except for estimated daily discharges, which are fair. Less than 500 acres irrigated by diversions from Greys River and tributaries upstream from station.

AVERAGE DISCHARGE.--35 years (1938, 1954-87), 665 ft<sup>3</sup>/s, 20.16 in./yr, 481,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 7,230 ft<sup>3</sup>/s, June 19, 1971, gage height, 6.33 ft; maximum gage height observed, 19.1 ft, former site and datum, about Dec. 18, 1965 (ice jam); minimum, 84 ft<sup>3</sup>/s, Feb. 17, 1986, result of current-meter measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

| Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) | Date                                  | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--------|------|-----------------------------------|---------------------|---------------------------------------|------|-----------------------------------|---------------------|
| May 18 | 2245 | *1670                             | 3.63                | No peaks greater than base discharge. |      |                                   |                     |
| Feb. 1 | 1415 | ice jam                           | *9.81               |                                       |      |                                   |                     |

Minimum discharge, 122 ft<sup>3</sup>/s, Mar. 8, gage height, 1.10 ft, (result of freezout upstream from gaging station).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY         | OCT   | NOV    | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL    | AUG   | SEP   |
|-------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| 1           | 486   | e395   | 292   | e228  | e216  | 199   | 230   | 1490  | 1040  | 515    | 389   | 271   |
| 2           | 486   | e370   | 289   | e250  | e214  | 194   | 238   | 1380  | 983   | 498    | 375   | 271   |
| 3           | 483   | e385   | 310   | e242  | e228  | 197   | 263   | 1110  | 933   | 487    | 358   | 274   |
| 4           | 473   | e390   | 308   | e240  | e218  | 199   | 309   | 1040  | 916   | 463    | 350   | 305   |
| 5           | 462   | e410   | 336   | e240  | e206  | 204   | 369   | 1050  | 912   | 461    | 346   | 292   |
| 6           | 461   | e425   | 354   | e238  | e202  | 208   | 459   | 1080  | 927   | 461    | 343   | 274   |
| 7           | 456   | e415   | 338   | e226  | e198  | 219   | 471   | 1100  | 983   | 451    | 335   | 270   |
| 8           | 456   | e390   | 326   | e222  | e204  | 240   | 485   | 1130  | 954   | 451    | 334   | 268   |
| 9           | 451   | e360   | 272   | e220  | e216  | 250   | 504   | 1150  | 919   | 451    | 317   | 268   |
| 10          | 446   | e340   | e275  | e202  | e222  | 239   | 485   | 1220  | 914   | 525    | 316   | 268   |
| 11          | 440   | e375   | e270  | e210  | e228  | 238   | 535   | 1220  | 884   | 572    | 316   | 268   |
| 12          | 431   | e365   | e265  | e208  | e230  | 223   | 496   | 1200  | 853   | 500    | 316   | 268   |
| 13          | 420   | e350   | e275  | e212  | e235  | 225   | 459   | 1200  | 816   | 467    | 316   | 268   |
| 14          | 420   | e370   | e290  | e214  | e226  | 225   | 480   | 1180  | 795   | 438    | 359   | 268   |
| 15          | 420   | e385   | e275  | e210  | e220  | 221   | 577   | 1210  | 776   | 431    | 435   | 266   |
| 16          | 419   | e380   | e265  | e204  | e222  | 221   | 735   | 1210  | 768   | 412    | 385   | 255   |
| 17          | 411   | e370   | e255  | e198  | e228  | 223   | 892   | 1340  | 721   | 444    | 342   | 256   |
| 18          | 410   | e350   | e235  | e206  | e232  | 223   | 982   | 1520  | 707   | 452    | 325   | 256   |
| 19          | 410   | e390   | e230  | e182  | e220  | 219   | 949   | 1560  | 668   | 436    | 316   | 256   |
| 20          | 410   | e375   | e242  | e170  | e200  | 205   | 761   | 1440  | 634   | 421    | 307   | 256   |
| 21          | 410   | 384    | e244  | e176  | e210  | e194  | 673   | 1360  | 624   | 446    | 300   | 253   |
| 22          | 410   | 377    | e246  | e180  | e214  | 210   | 702   | 1270  | 596   | 578    | 317   | 253   |
| 23          | 405   | 362    | e248  | e188  | e222  | e192  | 848   | 1150  | 588   | 473    | 316   | 253   |
| 24          | e402  | 368    | e250  | e198  | e214  | e190  | 974   | 1060  | 568   | 435    | 334   | 247   |
| 25          | e400  | 359    | e248  | e210  | e208  | e194  | 1030  | 1060  | 559   | 416    | 336   | 241   |
| 26          | e390  | 319    | e250  | e222  | e204  | e196  | 1080  | 1060  | 546   | 410    | 339   | 241   |
| 27          | e380  | 350    | e244  | e212  | e202  | e198  | 1170  | 1050  | 521   | 405    | 319   | 239   |
| 28          | e365  | 348    | e236  | e206  | e200  | e198  | 1250  | 1160  | 512   | 423    | 315   | 237   |
| 29          | e360  | 353    | e226  | e202  | ---   | e200  | 1240  | 1150  | 514   | 418    | 305   | 235   |
| 30          | e380  | 349    | e220  | e194  | ---   | 199   | 1250  | 1120  | 530   | 418    | 280   | 234   |
| 31          | e410  | ---    | e236  | e204  | ---   | 215   | ---   | 1060  | ---   | 398    | 271   | ---   |
| TOTAL       | 13163 | 11159  | 8350  | 6514  | 6039  | 6558  | 20896 | 37330 | 22661 | 14156  | 10312 | 7811  |
| MEAN        | 425   | 372    | 269   | 210   | 216   | 212   | 697   | 1204  | 755   | 457    | 333   | 260   |
| MAX         | 486   | 425    | 354   | 250   | 235   | 250   | 1250  | 1560  | 1040  | 578    | 435   | 305   |
| MIN         | 360   | 319    | 220   | 170   | 198   | 190   | 230   | 1040  | 512   | 398    | 271   | 234   |
| AC-FT       | 26110 | 22130  | 16560 | 12920 | 11980 | 13010 | 41450 | 74040 | 44950 | 28080  | 20450 | 15490 |
| CAL YR 1986 | TOTAL | 367595 | MEAN  | 1007  | MAX   | 5700  | MIN   | 135   | AC-FT | 729100 |       |       |
| WTR YR 1987 | TOTAL | 164949 | MEAN  | 452   | MAX   | 1560  | MIN   | 170   | AC-FT | 327200 |       |       |

e Estimated

## 13027500 SALT RIVER ABOVE RESERVOIR, NEAR ETNA, WY

LOCATION.--Lat°43 04'47", long 111°02'12", in SW1/4 NE1/4 sec.28, T.36 N., R.119 W., Lincoln County, Hydrologic Unit 17040105, on right bank 3.4 mi northwest of Etna and 8.0 mi upstream from maximum flowline of Palisades Reservoir.

DRAINAGE AREA.--829 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 5,675.78 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Records good. Diversions above station for power developments, industry, municipal supply, and irrigation of about 60,500 acres of which about 1,000 acre are below station (1966 determination). For details on adjudication of diversions, see Remarks for this station in WSP 1347.

AVERAGE DISCHARGE.--34 years, 812 ft<sup>3</sup>/s, 588,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,090 ft<sup>3</sup>/s, June 2, 1986, gage height, 5.71 ft; minimum, 160 ft<sup>3</sup>/s, Jan. 7, 8, 1971, gage height, 1.53 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,070 ft<sup>3</sup>/s, May 29, gage height, 2.76 ft; minimum daily, 380 ft<sup>3</sup>/s, Jan. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987  
MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 997   | 738   | 634   | 495   | e470  | 429   | 429   | 666   | 863   | 493   | 561   | 482   |
| 2     | 942   | 720   | 630   | 544   | 473   | 427   | 482   | 713   | 825   | 477   | 548   | 483   |
| 3     | 928   | 718   | 639   | 520   | 490   | 425   | 549   | 669   | 792   | 472   | 538   | 492   |
| 4     | 909   | 714   | 636   | 529   | 490   | 427   | 646   | 624   | 752   | 468   | 472   | 502   |
| 5     | 880   | 713   | 646   | 529   | 483   | 422   | 744   | 591   | 726   | 461   | 438   | 497   |
| 6     | 861   | 731   | 661   | 534   | 479   | 421   | 877   | 574   | 713   | 455   | 433   | 492   |
| 7     | 860   | 732   | 654   | 518   | 478   | 433   | 1010  | 561   | 735   | 458   | 420   | 488   |
| 8     | 862   | 738   | 652   | 485   | e470  | 452   | 980   | 521   | 753   | 462   | 418   | 485   |
| 9     | 855   | 743   | 632   | 479   | e460  | 478   | 879   | 444   | 764   | 465   | 424   | 477   |
| 10    | 842   | 732   | 593   | 445   | e470  | 482   | 820   | 438   | 775   | 530   | 427   | 467   |
| 11    | 836   | 725   | 591   | 465   | e475  | 484   | 827   | 447   | 751   | 636   | 428   | 467   |
| 12    | 836   | 726   | 575   | 467   | 484   | 471   | 791   | 445   | 725   | 597   | 437   | 467   |
| 13    | 831   | 720   | 583   | 453   | 490   | 457   | 708   | 433   | 705   | 566   | 494   | 481   |
| 14    | 815   | 714   | 609   | 456   | 496   | 467   | 688   | 426   | 693   | 500   | 481   | 479   |
| 15    | 804   | 715   | 611   | 458   | 481   | 461   | 704   | 388   | 659   | 488   | 579   | 477   |
| 16    | 790   | 719   | 600   | 435   | 479   | 458   | 743   | 406   | 641   | 468   | 532   | 470   |
| 17    | 788   | 737   | 581   | 404   | 475   | 460   | 784   | 466   | 627   | 480   | 510   | 467   |
| 18    | 787   | 718   | 553   | 413   | e460  | 490   | 810   | 667   | 594   | 490   | 484   | 466   |
| 19    | 789   | 733   | 549   | e395  | e445  | 488   | 816   | 750   | 582   | 474   | 476   | 459   |
| 20    | 802   | 735   | 576   | e380  | e430  | 460   | 757   | 726   | 581   | 473   | 475   | 452   |
| 21    | 799   | 729   | 575   | 397   | 444   | 446   | 693   | 755   | 572   | 502   | 478   | 448   |
| 22    | 793   | 725   | 576   | e390  | 447   | 439   | 684   | 764   | 560   | 600   | 489   | 445   |
| 23    | 777   | 711   | 567   | 407   | 470   | 432   | 710   | 739   | 549   | 571   | 485   | 441   |
| 24    | 762   | 700   | 567   | 444   | 449   | 421   | 712   | 710   | 535   | 548   | 481   | 434   |
| 25    | 754   | 690   | 569   | 469   | e440  | 421   | 725   | 739   | 507   | 528   | 493   | 427   |
| 26    | 746   | 671   | 563   | 483   | 432   | 420   | 717   | 750   | 494   | 521   | 486   | 425   |
| 27    | 732   | 672   | 562   | 473   | 436   | 420   | 709   | 837   | 484   | 521   | 483   | 422   |
| 28    | 725   | 669   | 541   | e460  | 436   | 414   | 695   | 970   | 469   | 520   | 491   | 424   |
| 29    | 723   | 668   | 514   | e450  | ---   | 399   | 674   | 1040  | 473   | 523   | 500   | 423   |
| 30    | 739   | 661   | e495  | e440  | ---   | 398   | 654   | 945   | 491   | 519   | 498   | 427   |
| 31    | 771   | ---   | 511   | e455  | ---   | 406   | ---   | 887   | ---   | 524   | 486   | ---   |
| TOTAL | 25335 | 21417 | 18245 | 14272 | 13032 | 13708 | 22017 | 20091 | 19390 | 15790 | 14945 | 13866 |
| MEAN  | 817   | 714   | 589   | 460   | 465   | 442   | 734   | 648   | 646   | 509   | 482   | 462   |
| MAX   | 997   | 743   | 661   | 544   | 496   | 490   | 1010  | 1040  | 863   | 636   | 579   | 502   |
| MIN   | 723   | 661   | 495   | 380   | 430   | 398   | 429   | 388   | 469   | 455   | 418   | 422   |
| AC-FT | 50250 | 42480 | 36190 | 28310 | 25850 | 27190 | 43670 | 39850 | 38460 | 31320 | 29640 | 27500 |

CAL YR 1986 TOTAL 478924 MEAN 1312 MAX 5030 MIN 355 AC-FT 949900  
WTR YR 1987 TOTAL 212108 MEAN 581 MAX 1040 MIN 380 AC-FT 420700

e Estimated

13027500 SALT RIVER ABOVE RESERVOIR, NEAR ETNA, WY--Continued

PERIOD OF RECORD.--Water years 1966 to current year.

PERIOD OF DAILY RECORD:

WATER TEMPERATURES: May 1977 to September 1979.

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|--------------|------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
| JUN<br>15... | 1845 | 598                                             | 14.5                                 | <0.01                                                           | <0.01                                                        | 0.01                      | <0.01                      | <0.01                      | <0.01                      |
| JUL<br>28... | 0800 | 435                                             | 12.0                                 | <0.01                                                           | 0.01                                                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| AUG<br>19... | 1800 | 351                                             | 17.0                                 | <0.01                                                           | 0.01                                                         | 0.03                      | <0.01                      | <0.01                      | <0.01                      |

## Special study and miscellaneous sites

Discharge measurements in the following table were made at special study and miscellaneous sites throughout the State.

Discharge measurements made at special study and miscellaneous sites during water year 1987

| Stream                  | Tributary to                      | Location                                                                                                                                                                                                                                   | Drainage area (sq mi) | Measured pre-viously (water years) | Measurements                                                               |                                                   |
|-------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------|
|                         |                                   |                                                                                                                                                                                                                                            |                       |                                    | Date                                                                       | Dis-charge (cfs)                                  |
| Yellowstone River basin |                                   |                                                                                                                                                                                                                                            |                       |                                    |                                                                            |                                                   |
| Elkhorn Creek           | Little Bighorn River              | Lat 44°59'57", long 107°38'07", in NE1/4 sec.17, T.58 N., R.89 W., Sheridan County, Hydrologic Unit 10080016, 100 ft upstream from mouth, and 16 mi west of Parkman.                                                                       |                       | 1983-85                            | 3- 5-87<br>4-29-87<br>5- 9-87<br>6-30-87                                   | 0<br>3.61<br>.34<br>0                             |
| Red Canyon Creek        | Powers Upper Ditch (Spring Creek) | Lat 45°00'16", long 107°36'24", in NW1/4 NE1/4 NE1/4 sec.16, T.58 N., R.89 W., Sheridan County, Hydrologic Unit 10080016, at Wyoming-Montana State line, 0.5 mi upstream from Powers Upper Ditch, and 15 mi west of Parkman.               |                       | 1983-86                            | 10-30-86<br>4-29-87<br>5- 9-87<br>5-20-87<br>6-30-87<br>7-29-87<br>9-10-87 | .09<br>.57<br>1.09<br>.72<br>1.76<br>1.35<br>1.36 |
| North Fork Powder River | Powder River                      | Lat 44°00'24", long 107°00'59", in SW1/4 SW1/4 SE1/4 sec.25, T.47 N., R.85 W., Johnson County, Hydrologic Unit 10090201, 0.3 mi downstream from Bull Creek, 2.4 mi downstream from Dull Knife Reservoir, and 6.9 mi southwest of Hazelton. |                       |                                    | 5-19-87                                                                    | 22.5                                              |
| Platte River Basin      |                                   |                                                                                                                                                                                                                                            |                       |                                    |                                                                            |                                                   |
| Douglas Creek           | North Platte River                | Lat 41°04'45", long 106°18'40", in E1/2 sec.19, T.13 N., R.79 W., Albany County, Hydrologic Unit 10180002, 0.75 mi downstream from Beaver (Pelton) Creek, and 8.5 mi west of Foxpark.                                                      | 120                   | 1946-72†                           | 7-23-87                                                                    | 9.60                                              |
| Smith Creek 06645150    | Muddy Creek                       | Lat 42°39'00", long 106°10'44", in SW1/4 SE1/4 SW1/4 sec.15, T.31 N., R.78 W., Natrona County, Hydrologic Unit 10180007, 1.2 mi upstream from Otter Creek, and 16 mi southeast of Casper.                                                  | 9.91                  | 1974-79†<br>1985                   | 8-20-87                                                                    | 2.03                                              |
| Smith Creek 06645160    | Muddy Creek                       | Lat 42°39'24", long 106°09'40", in NE1/4 NW1/4 SW1/4 sec.14, T.31 N., R.78 W., Natrona County, Hydrologic Unit 10180007, 0.2 mi upstream from Otter Creek, and 15 mi southeast of Casper.                                                  | 10.9                  | 1974-79†<br>1985                   | 8-20-87                                                                    | 0                                                 |
| Otter Creek             | Smith Creek                       | Lat 42°39'18", long 106°10'35", in NE1/4 SW1/4 sec.15, T.31 N., R.78 W., Natrona County, Hydrologic Unit 10180007, 1.1 mi upstream from mouth, and 15 mi southeast of Casper.                                                              |                       |                                    | 8-21-87                                                                    | 1.18                                              |
| Unnamed Spring          | Otter Creek                       | Lat 42°39'27", long 106°10'07", in SW1/4 SE1/4 NE1/4 sec.15, T.31 N., R.78 W., Natrona County, Hydrologic Unit 10180007, 150 ft upstream from mouth, and 15 mi southeast of Casper.                                                        |                       |                                    | 8-21-87                                                                    | .36                                               |
| Otter Creek             | Smith Creek                       | Lat 42°39'26", long 106°09'55", in SE1/4 SE1/4 NE1/4 sec.15, T.31 N., R.78 W., Natrona County, Hydrologic Unit 10180007, 0.4 mi upstream from mouth, and 15 mi southeast of Casper.                                                        |                       |                                    | 8-21-87                                                                    | 1.86                                              |
| Otter Creek             | Smith Creek                       | Lat 42°39'31", long 106°09'34", in SE1/4 SW1/4 NW1/4 sec.14, T.31 N., R.78 W., Natrona County, Hydrologic Unit 10180007, 80 ft downstream from road crossing, 100 ft upstream from mouth, and 15 mi southeast of Casper.                   |                       |                                    | 8-20-87                                                                    | 1.61                                              |

† Operated at a continuous-record gaging station.



Discharge measurements made at special study and miscellaneous sites during water year 1987

| Stream                        | Tributary to              | Location                                                                                                                                                                                                                                                                                 | Drainage<br>area<br>(sq mi) | Measured<br>pre-<br>viously<br>(water<br>years) | Measurements                             |                              |
|-------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------|------------------------------------------|------------------------------|
|                               |                           |                                                                                                                                                                                                                                                                                          |                             |                                                 | Date                                     | Dis-<br>charge<br>(cfs)      |
| Platte River Basin--Continued |                           |                                                                                                                                                                                                                                                                                          |                             |                                                 |                                          |                              |
| Smith Creek                   | Muddy Creek               | Lat 42°40'14", long 106°09'04", in<br>NE1/4 NW1/4 SE1/4 sec.11, T.31 N.,<br>R.78 W., Natrona County, Hydrologic<br>Unit 10180007, 90 ft downstream from<br>road crossing, 0.6 mi upstream from<br>Spring Creek, 1.0 mi downstream from<br>Otter Creek, and 14 mi southeast of<br>Casper. |                             |                                                 | 8-20-87                                  | 2.66                         |
| Green River Basin             |                           |                                                                                                                                                                                                                                                                                          |                             |                                                 |                                          |                              |
| Haskin Creek<br>tributary     | Haskin Creek              | Lat 41°09'32", long 107°02'29", in<br>NE1/4 NE1/4 sec.27, T.14 N. R. 86 W.,<br>Carbon County, Hydrologic Unit 14050003,<br>Medicine Bow National Forest, 0.5 mi<br>upstream from mouth, 0.5 mi upstream<br>from Haskin Creek Campground,<br>and 13 mi west of Encampment.                |                             |                                                 | 4-29-87<br>5- 9-87<br>5- 9-87            | 5.49<br>14.3<br>17.9         |
| Haskin Creek                  | Battle Creek              | Lat 41°09'20", long 107°02'50", in<br>SW1/4 NE1/4 sec.27, T.14 N., R.86 W.,<br>Carbon County, Hydrologic Unit 14050003,<br>Medicine Bow National Forest, 0.2 mi<br>upstream from unnamed tributary, 0.2 mi<br>upstream from Haskin Creek Campground,<br>and 14 mi west of Encampment.    |                             |                                                 | 4-29-87<br>5- 8-87<br>5- 9-87            | 9.63<br>13.8<br>13.1         |
| Lost Creek                    | West Fork<br>Battle Creek | Lat 41°09'11", long 107°04'28", in<br>NE1/4 SW1/4 sec.28, T.14 N., R.86 W.,<br>Carbon County, Hydrologic Unit 14050003,<br>Medicine Bow National Forest, 0.9 mi<br>upstream from Lost Creek Campground,<br>3.8 mi upstream from Haggerty Creek,<br>and 15 mi west of Encampment.         |                             |                                                 | 4-29-87<br>4-29-87<br>5- 8-87<br>5- 9-87 | 3.29<br>3.11<br>18.2<br>12.7 |
| Deep Gulch<br>tributary       | Deep Gulch                | Lat 41°19'35", long 107°12'41", in<br>SW1/4 SW1/4 sec.29, T.16 N., R.87 W.,<br>Carbon County, Hydrologic Unit 14050003,<br>2,000 feet west of Medicine Bow National<br>Forest boundary, 0.9 mi upstream from<br>mouth, and 24 mi west of Encampment.                                     |                             |                                                 | 4-22-87<br>4-29-87<br>5-10-87            | 2.67<br>6.37<br>1.37         |
| Mexican Creek                 | East Fork<br>Savery Creek | Lat 41°16'07", long 107°11'26", in<br>NW1/4 SW1/4 sec.16, T.15 N., R.87 W.,<br>Carbon County, Hydrologic Unit 14050003,<br>Medicine Bow National Forest, 200 ft<br>upstream from mouth, 1,200 feet east of<br>Medicine Bow National Forest boundary,<br>and 21 mi west of Encampment.    |                             |                                                 | 4-22-87                                  | no flow                      |
| Bear Creek                    | East Fork<br>Savery Creek | Lat 41°16'50", long 107°11'19", in<br>SE1/4 SW1/4 sec.9, T.15 N., R.87 W.,<br>Carbon County, Hydrologic Unit 14050003,<br>1,500 ft east of Medicine Bow National<br>Forest boundary, 0.8 mi upstream from<br>mouth, and 21 mi west of Encampment.                                        |                             |                                                 | 4-22-87<br>4-29-87<br>5- 8-87            | 0.89<br>1.48<br>1.09         |
| Hatch Creek                   | East Fork<br>Savery Creek | Lat 41°17'07", long 107°12'06", in<br>NW1/4 SE1/4 sec.8, T.15 N., R.87 W.,<br>Carbon County, Hydrologic Unit 14050003,<br>2,000 feet west of Medicine Bow National<br>Forest boundary, 1.7 mi upstream from<br>mouth, and 22 mi west of Encampment.                                      |                             |                                                 | 4-22-87<br>4-29-87<br>5- 8-87            | 1.79<br>3.31<br>2.54         |
| Dirtyman Fork                 | East Fork<br>Savery Creek | Lat 41°14'40", long 107°11'42", in<br>SE1/4 NE1/4 sec.29, T.15 N., R.87 W.,<br>Carbon County, Hydrologic Unit 14050003,<br>200 ft upstream from unnamed tributary,<br>500 ft outside of Medicine Bow National<br>Forest, and 21 mi west of Encampment.                                   |                             |                                                 | 4-29-87<br>5- 8-87                       | 2.68<br>5.72                 |
| Deep Creek                    | Big Sandstone             | Lat 41°12'13", long 107°11'07", in<br>NE1/4 NW1/4 sec.9, T.14 N., R.87 W.,<br>Carbon County, Hydrologic Unit 14050003,<br>2,400 ft upstream from the Deep Creek<br>Diversion, 4.8 mi upstream from mouth,<br>and 20 mi west of Encampment.                                               |                             |                                                 | 4-29-87<br>4-29-87<br>5- 8-87            | 11.2<br>12.8<br>11.9         |

## PLATTE RIVER BASIN

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

412600107070001 LOCO CREEK (TRIBUTARY TO BEAVER CREEK) NEAR SARATOGA, WY (LAT 41 26 00 LONG 107 07 00)

| DATE     | TIME | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | CARBON,<br>ORGANIC<br>DIS-<br>SOLVED<br>(MG/L<br>AS C) | CARBON,<br>ORGANIC<br>SUS-<br>PENDED<br>TOTAL<br>(MG/L<br>AS C) |
|----------|------|---------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------|
| FEB 1987 |      |                                                   |                                                        |                                                                 |
| 04...    | 1305 | 180                                               | 1.1                                                    | 0.3                                                             |
| MAR      |      |                                                   |                                                        |                                                                 |
| 02...    | 1725 | --                                                | 1.6                                                    | 0.2                                                             |
| 11...    | 1138 | 266                                               | 2.8                                                    | 0.2                                                             |
| APR      |      |                                                   |                                                        |                                                                 |
| 07...    | 1844 | 85                                                | 12                                                     | 3.4                                                             |
| 23...    | 1429 | 187                                               | 1.5                                                    | 0.4                                                             |
| 29...    | 1033 | 227                                               | 2.2                                                    | 0.2                                                             |
| MAY      |      |                                                   |                                                        |                                                                 |
| 08...    | 1255 | --                                                | 1.5                                                    | 0.3                                                             |
| JUN      |      |                                                   |                                                        |                                                                 |
| 02...    | 1043 | 257                                               | 1.0                                                    | 0.3                                                             |
| JUL      |      |                                                   |                                                        |                                                                 |
| 01...    | 1628 | 275                                               | 1.3                                                    | 0.7                                                             |
| 30...    | 1615 | 276                                               | 2.6                                                    | 0.5                                                             |
| SEP      |      |                                                   |                                                        |                                                                 |
| 03...    | 0806 | 285                                               | 1.4                                                    | 0.3                                                             |

412630107063001 NORTH DRAW (TRIBUTARY TO BEAVER CREEK) NEAR SARATOGA, WY (LAT 41 26 30 LONG 107 06 30)

| DATE     | TIME | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | CARBON,<br>ORGANIC<br>DIS-<br>SOLVED<br>(MG/L<br>AS C) | CARBON,<br>ORGANIC<br>SUS-<br>PENDED<br>TOTAL<br>(MG/L<br>AS C) |
|----------|------|---------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------|
| MAR 1987 |      |                                                   |                                                        |                                                                 |
| 11...    | 0952 | 37                                                | 30                                                     | 0.7                                                             |
| 11...    | 1304 | 47                                                | 32                                                     | 0.8                                                             |
| 11...    | 1322 | 46                                                | 32                                                     | 0.9                                                             |
| 18...    | 1717 | 52                                                | 27                                                     | 0.4                                                             |
| 18...    | 1728 | 47                                                | 29                                                     | 0.4                                                             |
| APR      |      |                                                   |                                                        |                                                                 |
| 07...    | 1645 | 37                                                | 18                                                     | 2.6                                                             |
| 07...    | 1701 | 36                                                | 18                                                     | 1.6                                                             |
| 23...    | 1600 | 54                                                | 4.3                                                    | 0.4                                                             |
| 29...    | 1408 | 62                                                | 6.1                                                    | 0.2                                                             |
| MAY      |      |                                                   |                                                        |                                                                 |
| 08...    | 0753 | --                                                | 3.2                                                    | 0.3                                                             |

## ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN WYOMING

## PLATTE RIVER BASIN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

06643000 BATES CREEK NEAR ALCOVA, WY (LAT 42 40 34 LONG 106 36 09)

| DATE         | TIME | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BORON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS B) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) |
|--------------|------|--------------------------------------|---------------------------------------------------|--------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|
| OCT<br>16... | 0900 | 9.0                                  | 1700                                              | 8.1                            | <1                                           | <100                                         | 200                                        | 1                                            | <10                                                 |

| DATE         | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|--------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------------|--------------------------------------------|
| OCT<br>16... | 10                                           | <0.1                                         | <5                                         | 13                                                    | 1                                            | 8                                                   | <1                                           | <1                                                 | <10                                        |

424435106370300 RASMUS LEE LAKE NEAR GOOSE EGG, WY (LAT 42 44 35 LONG 106 37 03 00)

| DATE         | TIME | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BORON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS B) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) |
|--------------|------|--------------------------------------|---------------------------------------------------|--------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|
| OCT<br>16... | 1300 | 12.0                                 | 8900                                              | 8.9                            | 9                                            | 100                                          | 1100                                       | <1                                           | <10                                                 |

| DATE         | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|--------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------------|--------------------------------------------|
| OCT<br>16... | 20                                           | <0.1                                         | <5                                         | 5                                                     | 2                                            | 12                                                  | <1                                           | 6                                                  | 20                                         |

06643100 POISON SPRING CREEK NEAR ALCOVA, WY (LAT 42 42 55 LONG 106 34 43)

| DATE         | TIME | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BORON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS B) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) |
|--------------|------|--------------------------------------|---------------------------------------------------|--------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|
| OCT<br>16... | 1000 | 6.0                                  | 4600                                              | 8.3                            | 1                                            | 100                                          | 660                                        | <1                                           | <10                                                 |

| DATE         | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|--------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------------|--------------------------------------------|
| OCT<br>16... | 10                                           | <0.1                                         | <5                                         | 5                                                     | 6                                            | 150                                                 | <1                                           | 2                                                  | <10                                        |

## PLATTE RIVER BASIN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

06644000 POISON SPIDER CREEK NEAR GOOSE EGG, WY (LAT 42 46 44 LONG 106 31 46)

| DATE         | TIME | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BORON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS B) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) |
|--------------|------|--------------------------------------|---------------------------------------------------|--------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|
| OCT<br>16... | 1200 | 10.0                                 | 3100                                              | 8.2                            | <1                                           | <100                                         | 450                                        | <1                                           | <10                                                 |

| DATE         | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|--------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------------|--------------------------------------------|
| OCT<br>16... | 10                                           | <0.1                                         | <5                                         | 10                                                    | 2                                            | 90                                                  | <1                                           | <1                                                 | <10                                        |

06644040 OREGON TRAIL DRAIN NEAR GOOSE EGG, WY (LAT 42 49 41 LONG 106 24 51)

| DATE         | TIME | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BORON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS B) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) |
|--------------|------|--------------------------------------|---------------------------------------------------|--------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|
| OCT<br>16... | 1630 | 12.0                                 | 4550                                              | 8.5                            | 1                                            | 100                                          | 890                                        | <1                                           | <10                                                 |

| DATE         | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) |
|--------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------------|--------------------------------------------|
| OCT<br>16... | 20                                           | <0.1                                         | <5                                         | 13                                                    | 16                                           | 300                                                 | <1                                           | 2                                                  | 10                                         |

## ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN WYOMING

## GREEN RIVER BASIN

411637107165201 SW87-11, EAST FORK SAVERY CREEK ABOVE SAVERY, WY (LAT 41 16 37 LONG 107 16 52)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) |
|-------|------|-------------------------------------------------|-------------------------------------|----------------------------------------------|--------------------------------------------|-----------------------------------------------------|
| APR   |      |                                                 |                                     |                                              |                                            |                                                     |
| 04... | 1310 | 41                                              | 5                                   | 1                                            | <1                                         | <1                                                  |
| 22... | 1230 | 42                                              | 3                                   | 2                                            | <1                                         | <1                                                  |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDE<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | URANIUM<br>NATURAL<br>TOTAL<br>(UG/L<br>AS U) |
|-------|------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|
| APR   |      |                                                 |                                                            |                                                            |                                            |                                                                |                                               |
| 04... | 1310 | 41                                              | <1.3                                                       | 17                                                         | 14                                         | 2.2                                                            | 1.8                                           |
| 22... | 1230 | 42                                              | 8.0                                                        | 11                                                         | 13                                         | 3.5                                                            | 1.1                                           |

411638107165301 SW87-10, NORTH FORK SAVERY CREEK ABOVE SAVERY, WY (LAT 41 16 38 LONG 107 16 53)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) |
|-------|------|-------------------------------------------------|-------------------------------------|----------------------------------------------|--------------------------------------------|-----------------------------------------------------|
| APR   |      |                                                 |                                     |                                              |                                            |                                                     |
| 04... | 1300 | 31                                              | 4                                   | 2                                            | <1                                         | <1                                                  |
| 22... | 1200 | 42                                              | 3                                   | 2                                            | <1                                         | <1                                                  |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDE<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | URANIUM<br>NATURAL<br>TOTAL<br>(UG/L<br>AS U) |
|-------|------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|
| APR   |      |                                                 |                                                            |                                                            |                                            |                                                                |                                               |
| 04... | 1300 | 31                                              | 2.4                                                        | <7.7                                                       | 8.8                                        | 4.5                                                            | 3.4                                           |
| 22... | 1200 | 42                                              | 5.3                                                        | 36                                                         | 28                                         | 8.6                                                            | 4.6                                           |

## GREEN RIVER BASIN--Continued

411809107230901 SW87-8, LITTLE SAVERY CREEK ABOVE SAVERY, WY (LAT 41 18 09 LONG 107 23 09)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) |
|-------|------|-------------------------------------------------|-------------------------------------|----------------------------------------------|--------------------------------------------|-----------------------------------------------------|
| APR   |      |                                                 |                                     |                                              |                                            |                                                     |
| 04... | 1505 | --                                              | 2                                   | 1                                            | 1                                          | <1                                                  |
| 22... | 1630 | 9.3                                             | 4                                   | 3                                            | 2                                          | 1                                                   |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDE<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | URANIUM<br>NATURAL<br>TOTAL<br>(UG/L<br>AS U) |
|-------|------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|
| APR   |      |                                                 |                                                            |                                                            |                                            |                                                                |                                               |
| 04... | 1505 | --                                              | 1.4                                                        | 15                                                         | 14                                         | 5.8                                                            | 3.1                                           |
| 22... | 1630 | 9.3                                             | 5.7                                                        | 11                                                         | 12                                         | 6.3                                                            | 7.7                                           |

411808107231201 SW87-9, UNNAMED CHANNEL ABOVE LITTLE SAVERY CREEK, WY (LAT 41 18 08 LONG 107 23 12)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) |
|-------|------|-------------------------------------------------|-------------------------------------|----------------------------------------------|--------------------------------------------|-----------------------------------------------------|
| APR   |      |                                                 |                                     |                                              |                                            |                                                     |
| 04... | 1500 | E20                                             | 3                                   | <1                                           | 1                                          | <1                                                  |
| 22... | 1630 | 1.9                                             | 1                                   | 1                                            | <1                                         | <1                                                  |

E-Estimate.

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDE<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | URANIUM<br>NATURAL<br>TOTAL<br>(UG/L<br>AS U) |
|-------|------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|
| APR   |      |                                                 |                                                            |                                                            |                                            |                                                                |                                               |
| 04... | 1500 | E20                                             | <1.2                                                       | 19                                                         | 15                                         | 7.5                                                            | --                                            |
| 22... | 1630 | 1.9                                             | 8.7                                                        | 4.0                                                        | 4.0                                        | 12                                                             | 2.4                                           |

E-Estimate.



## ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN WYOMING

## GREEN RIVER BASIN--Continued

411634107222901 SWS7-7, UNNAMED CHANNEL ABOVE LITTLE SAVERY CREEK, WY (LAT 41 16 34 LONG 107 22 29)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) |
|--------------|------|-------------------------------------------------|-------------------------------------|----------------------------------------------|--------------------------------------------|-----------------------------------------------------|
| APR<br>04... | 1600 | E80                                             | 3                                   | <1                                           | 1                                          | <1                                                  |

E-Estimate.

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDE<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) |
|--------------|------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|
| APR<br>04... | 1600 | E80                                             | <0.7                                                       | 10                                                         | 34                                         | 4.3                                                            |

E-Estimate.

411602107213201 SW-13, UNNAMED CHANNEL ABOVE LITTLE SAVERY CREEK, WY (LAT 41 16 02 LONG 107 21 32)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) |
|--------------|------|-------------------------------------------------|-------------------------------------|----------------------------------------------|--------------------------------------------|-----------------------------------------------------|
| APR<br>22... | 1500 | 0.34                                            | 1                                   | <1                                           | 1                                          | 1                                                   |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDE<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | URANIUM<br>NATURAL<br>TOTAL<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|
| APR<br>22... | 1500 | 0.34                                            | 9.2                                                        | 1.0                                                        | 3.0                                        | 7.0                                                            | 8.1                                           |

## GREEN RIVER BASIN--Continued

411522107204201 SW87-6, LITTLE SAVERY CREEK ABOVE SAVERY CREEK, WY (LAT 41 15 22 LONG 107 20 42)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) |
|-------|------|-------------------------------------------------|-------------------------------------|----------------------------------------------|--------------------------------------------|-----------------------------------------------------|
| APR   |      |                                                 |                                     |                                              |                                            |                                                     |
| 04... | 1200 | 74                                              | 8                                   | 2                                            | 3                                          | <1                                                  |
| 22... | 1400 | 16                                              | 4                                   | 3                                            | 1                                          | 1                                                   |
| MAY   |      |                                                 |                                     |                                              |                                            |                                                     |
| 07... | 1100 | --                                              | 6                                   | --                                           | 1                                          | --                                                  |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDE<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | URANIUM<br>NATURAL<br>TOTAL<br>(UG/L<br>AS U) |
|-------|------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|
| APR   |      |                                                 |                                                            |                                                            |                                            |                                                                |                                               |
| 04... | 1200 | 74                                              | 3.0                                                        | 7.0                                                        | 11                                         | 7.8                                                            | 4.3                                           |
| 22... | 1400 | 16                                              | 5.6                                                        | 1.5                                                        | 8.8                                        | 5.9                                                            | 7.3                                           |
| MAY   |      |                                                 |                                                            |                                                            |                                            |                                                                |                                               |
| 07... | 1100 | --                                              | 2.0                                                        | 10                                                         | 13                                         | 6.9                                                            | 7.2                                           |

411409107215201 SW87-5, BIRD GULCH ABOVE SAVERY CREEK, WY (LAT 41 14 09 LONG 107 21 52)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) |
|-------|------|-------------------------------------------------|-------------------------------------|----------------------------------------------|--------------------------------------------|-----------------------------------------------------|
| APR   |      |                                                 |                                     |                                              |                                            |                                                     |
| 04... | 1100 | 25                                              | 3                                   | <1                                           | 1                                          | <1                                                  |
| 22... | 1730 | 5.5                                             | 1                                   | <1                                           | <1                                         | <1                                                  |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDE<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | URANIUM<br>NATURAL<br>TOTAL<br>(UG/L<br>AS U) |
|-------|------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|
| APR   |      |                                                 |                                                            |                                                            |                                            |                                                                |                                               |
| 04... | 1100 | 25                                              | 2.2                                                        | --                                                         | --                                         | 4.4                                                            | --                                            |
| 22... | 1730 | 5.5                                             | 4.4                                                        | 4.0                                                        | 7.0                                        | 4.6                                                            | 6.3                                           |

## ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN WYOMING

## GREEN RIVER BASIN--Continued

411010107212601 SW87-2, HELL CANYON AT SAVERY CREEK, WY (LAT 41 10 10 LONG 107 21 26)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) |
|--------------|------|-------------------------------------|--------------------------------------------|
| APR<br>02... | 1730 | <1                                  | <1                                         |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDE<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | URANIUM<br>NATURAL<br>TOTAL<br>(UG/L<br>AS U) |
|--------------|------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|
| APR<br>02... | 1730 | <1.6                                                       | 2.6                                                        | 2.2                                        | 3.4                                                            | 2.0                                           |

411024107213101 SW87-1, SAVERY CREEK ABOVE HELL CANYON, WY (LAT 41 10 24 LONG 107 21 31)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) |
|--------------|------|-------------------------------------------------|-------------------------------------|--------------------------------------------|
| APR<br>02... | 1600 | 118                                             | 4                                   | 1                                          |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE         | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDE<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | URANIUM<br>NATURAL<br>TOTAL<br>(UG/L<br>AS U) |
|--------------|------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|
| APR<br>02... | 1600 | 118                                             | 3.3                                                        | 4.6                                                        | 14                                         | 4.3                                                            | 3.6                                           |

## GREEN RIVER BASIN--Continued

411402107215001 SW87-3, SAVERY CREEK ABOVE COAL GULCH, WY (LAT 41 14 02 LONG 107 21 50)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | ARSENIC        |        | ARSENIC                 |        | SELE-<br>NIUM,<br>TOTAL |        | SELE-<br>NIUM,<br>DIS-<br>SOLVED |        |
|-------|------|---------------------------------------------------|----------------|--------|-------------------------|--------|-------------------------|--------|----------------------------------|--------|
|       |      |                                                   | TOTAL<br>(UG/L | AS AS) | DIS-<br>SOLVED<br>(UG/L | AS AS) | (UG/L                   | AS SE) | (UG/L                            | AS SE) |
| APR   |      |                                                   |                |        |                         |        |                         |        |                                  |        |
| 03... | 1610 | --                                                | 9              |        | 1                       |        | 2                       |        | <1                               |        |
| 04... | 1630 | 205                                               | 14             |        | --                      |        | 2                       |        | --                               |        |
| 05... | 1630 | 195                                               | 10             |        | --                      |        | <1                      |        | --                               |        |
| 06... | 1630 | 185                                               | 15             |        | --                      |        | <1                      |        | --                               |        |
| 07... | 1630 | 205                                               | 22             |        | --                      |        | <1                      |        | --                               |        |
| 08... | 1630 | 205                                               | 13             |        | --                      |        | <1                      |        | --                               |        |
| 09... | 1630 | 205                                               | 5              |        | --                      |        | 2                       |        | --                               |        |
| 10... | 1300 | 260                                               | 8              |        | --                      |        | 2                       |        | --                               |        |
| 11... | 1250 | --                                                | 5              |        | --                      |        | <1                      |        | --                               |        |
| 12... | 1250 | --                                                | 4              |        | --                      |        | <1                      |        | --                               |        |
| 15... | 1250 | --                                                | 7              |        | --                      |        | <1                      |        | --                               |        |
| 16... | 1250 | --                                                | 10             |        | --                      |        | <1                      |        | --                               |        |
| 17... | 1250 | --                                                | 9              |        | --                      |        | <1                      |        | --                               |        |
| 22... | 1250 | --                                                | 7              |        | --                      |        | <1                      |        | --                               |        |
| 22... | 1830 | --                                                | 3              |        | 2                       |        | <1                      |        | <1                               |        |
| 23... | 1830 | --                                                | 6              |        | --                      |        | <1                      |        | --                               |        |
| 24... | 1830 | --                                                | 4              |        | --                      |        | <1                      |        | --                               |        |
| 25... | 1830 | --                                                | 5              |        | --                      |        | <1                      |        | --                               |        |
| 26... | 1830 | --                                                | 6              |        | --                      |        | <1                      |        | --                               |        |
| 27... | 1830 | --                                                | 5              |        | --                      |        | <1                      |        | --                               |        |
| 28... | 1830 | --                                                | 4              |        | --                      |        | <1                      |        | --                               |        |
| 29... | 1830 | --                                                | 4              |        | --                      |        | <1                      |        | --                               |        |
| 30... | 1830 | --                                                | 4              |        | --                      |        | <1                      |        | --                               |        |
| MAY   |      |                                                   |                |        |                         |        |                         |        |                                  |        |
| 01... | 1830 | --                                                | 5              |        | --                      |        | <1                      |        | --                               |        |
| 02... | 1830 | --                                                | 4              |        | --                      |        | <1                      |        | --                               |        |
| 03... | 1830 | --                                                | 4              |        | --                      |        | <1                      |        | --                               |        |
| 04... | 1830 | --                                                | 4              |        | --                      |        | <1                      |        | --                               |        |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE  | TIME | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDED<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | URANIUM<br>NATURAL<br>TOTAL<br>(UG/L<br>AS U) |
|-------|------|---------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|
|       |      |                                                   |                                                            |                                                            |                                             |                                                                |                                               |
| APR   |      |                                                   |                                                            |                                                            |                                             |                                                                |                                               |
| 03... | 1610 | --                                                | 1.7                                                        | 33                                                         | 66                                          | 3.9                                                            | 7.8                                           |
| 04... | 1630 | 205                                               | 0.2                                                        | 110                                                        | 180                                         | 4.7                                                            | 8.5                                           |
| 05... | 1630 | 195                                               | 0.3                                                        | 100                                                        | 210                                         | 5.3                                                            | 6.7                                           |
| 06... | 1630 | 185                                               | <2.0                                                       | 120                                                        | 270                                         | 7.6                                                            | 9.3                                           |
| 07... | 1630 | 205                                               | 1.7                                                        | 160                                                        | 280                                         | 5.1                                                            | 9.8                                           |
| 08... | 1630 | 205                                               | 0.9                                                        | 42                                                         | 100                                         | 4.1                                                            | 5.9                                           |
| 09... | 1630 | 205                                               | 1.7                                                        | 36                                                         | 51                                          | 4.4                                                            | 4.6                                           |
| 11... | 1250 | --                                                | 2.5                                                        | 28                                                         | 37                                          | 7.5                                                            | 2.9                                           |
| 12... | 1250 | --                                                | 4.3                                                        | 26                                                         | 41                                          | 6.8                                                            | 2.9                                           |
| 15... | 1250 | --                                                | 2.6                                                        | 42                                                         | 36                                          | 5.7                                                            | 3.7                                           |
| 16... | 1250 | --                                                | 3.4                                                        | 38                                                         | 72                                          | 7.0                                                            | 5.0                                           |
| 17... | 1250 | --                                                | 1.9                                                        | 39                                                         | 50                                          | 4.1                                                            | 4.3                                           |
| 22... | 1250 | --                                                | 3.7                                                        | 31                                                         | 67                                          | 6.7                                                            | 7.4                                           |
| 22... | 1830 | --                                                | 3.4                                                        | 1.0                                                        | 12                                          | 6.7                                                            | 4.4                                           |
| 23... | 1830 | --                                                | 0.3                                                        | 7.0                                                        | 21                                          | 3.6                                                            | 3.4                                           |
| 24... | 1830 | --                                                | 0.5                                                        | 15                                                         | 14                                          | 4.7                                                            | 4.1                                           |
| 25... | 1830 | --                                                | 0.7                                                        | 14                                                         | 13                                          | 3.9                                                            | 2.9                                           |
| 26... | 1830 | --                                                | 1.0                                                        | 2.0                                                        | 9.0                                         | 3.6                                                            | 2.8                                           |
| 27... | 1830 | --                                                | 1.1                                                        | 7.0                                                        | 10                                          | 3.3                                                            | 2.4                                           |
| 28... | 1830 | --                                                | 1.1                                                        | 6.0                                                        | 16                                          | 3.1                                                            | 3.0                                           |
| 29... | 1830 | --                                                | <1.9                                                       | 9.0                                                        | 22                                          | 4.1                                                            | 2.6                                           |
| 30... | 1830 | --                                                | 1.6                                                        | 17                                                         | 19                                          | 4.1                                                            | 3.6                                           |
| MAY   |      |                                                   |                                                            |                                                            |                                             |                                                                |                                               |
| 01... | 1830 | --                                                | 1.8                                                        | 12                                                         | 12                                          | 4.3                                                            | 2.3                                           |
| 02... | 1830 | --                                                | <2.0                                                       | 0                                                          | 25                                          | 3.1                                                            | 2.8                                           |
| 03... | 1830 | --                                                | 1.2                                                        | 37                                                         | 16                                          | 3.8                                                            | 2.5                                           |
| 04... | 1830 | --                                                | 0.5                                                        | 11                                                         | 7.0                                         | 2.5                                                            | 3.5                                           |

## ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN WYOMING

## GREEN RIVER BASIN--Continued

411337107220601 SW87-4, COAL GULCH ABOVE SAVERY CREEK, WY (LAT 41 13 37 LONG 107 22 06)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) |
|-----------|------|-------------------------------------------------|-------------------------------------|--------------------------------------------|
| APR 04... | 1700 | --                                              | 3                                   | 1                                          |
| 22...     | 1900 | 3.6                                             | 1                                   | 1                                          |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDE<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | URANIUM<br>NATURAL<br>TOTAL<br>(UG/L<br>AS U) |
|-----------|------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|
| APR 22... | 1900 | 3.6                                             | 5.7                                                        | 23                                                         | 15                                         | 4.4                                                            | 4.7                                           |

410733107215501 SW87-12, SAVERY CREEK ABOVE LITTLE SANDSTONE CREEK, WY (LAT 41 07 33 LONG 107 21 55)

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) |
|-----------|------|---------------------------------------------------|-------------------------------------|----------------------------------------------|--------------------------------------------|-----------------------------------------------------|
| APR 05... | 1800 | 205                                               | 6                                   | --                                           | 1                                          | --                                                  |
| 06...     | 1800 | 205                                               | 6                                   | --                                           | 1                                          | --                                                  |
| 07...     | 1800 | 210                                               | 5                                   | --                                           | 1                                          | --                                                  |
| 08...     | 1800 | 225                                               | 5                                   | --                                           | 1                                          | --                                                  |
| 09...     | 1800 | --                                                | 5                                   | --                                           | 1                                          | --                                                  |
| 15...     | 1145 | --                                                | 9                                   | --                                           | <1                                         | --                                                  |
| 16...     | 1145 | --                                                | 17                                  | --                                           | <1                                         | --                                                  |
| 17...     | 1145 | --                                                | 8                                   | --                                           | <1                                         | --                                                  |
| 22...     | 1100 | --                                                | 3                                   | 2                                            | <1                                         | <1                                                  |
| MAY 06... | 1715 | --                                                | 3                                   | --                                           | <1                                         | --                                                  |

## RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| DATE      | TIME | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | GROSS<br>ALPHA,<br>DIS-<br>SOLVED<br>(UG/L<br>AS<br>U-NAT) | GROSS<br>ALPHA,<br>SUSP.<br>TOTAL<br>(UG/L<br>AS<br>U-NAT) | BETA,<br>SUS-<br>PENDE<br>TOTAL<br>(PCI/L) | GROSS<br>BETA,<br>DIS-<br>SOLVED<br>(PCI/L<br>AS SR/<br>YT-90) | URANIUM<br>NATURAL<br>TOTAL<br>(UG/L<br>AS U) |
|-----------|------|---------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-----------------------------------------------|
| APR 05... | 1800 | 205                                               | 0.3                                                        | 45                                                         | 70                                         | 4.9                                                            | 3.9                                           |
| 06...     | 1800 | 205                                               | <1.8                                                       | 51                                                         | 60                                         | 5.3                                                            | --                                            |
| 07...     | 1800 | 210                                               | 0.3                                                        | 32                                                         | 57                                         | 5.0                                                            | 4.3                                           |
| 08...     | 1800 | 225                                               | 1.2                                                        | 26                                                         | 28                                         | 3.7                                                            | --                                            |
| 09...     | 1800 | --                                                | <1.2                                                       | 30                                                         | 65                                         | 4.3                                                            | 3.4                                           |
| 15...     | 1145 | --                                                | 6.3                                                        | 13                                                         | 47                                         | 6.9                                                            | 5.8                                           |
| 16...     | 1145 | --                                                | 3.4                                                        | 88                                                         | 85                                         | 5.8                                                            | 15                                            |
| 17...     | 1145 | --                                                | 6.4                                                        | 23                                                         | 27                                         | 15                                                             | 5.6                                           |
| 22...     | 1100 | --                                                | 3.9                                                        | 8.0                                                        | 1.0                                        | 9.6                                                            | 3.5                                           |
| MAY 06... | 1715 | --                                                | 1.0                                                        | 10                                                         | 1.0                                        | 3.2                                                            | 2.5                                           |

## LARAMIE COUNTY

410111104223102. Local number, 12N 063W 15aaa02.

LOCATION.--Lat 41°01'11", long 104°22'31", in NE1/4 NE1/4 sec.15, T.12 N., R.63 W., Hydrologic Unit 10190009.

Owner: U. S. Geological Survey.

AQUIFER.--White River Formation or Group.

WELL CHARACTERISTICS.--Drilled unused water-table observation well, steel casing, diameter about 6.5 in, depth 110 ft, factory slotted perforations 86-110 ft.

DATUM.--Elevation of land-surface datum is about 5,384 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: top of casing, 1.5 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.11 ft, below land-surface datum, Apr. 30, 1974; lowest, 46.28 ft, below land-surface datum, Sept. 7, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Highest water level for the day, from digital recorder

| DAY | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5   | 25.08 | 23.40 | 22.35 | 21.17 | 20.41 | 19.81 | 19.17 | 18.72 | 19.79 | 23.67 | 28.19 | 28.21 |
| 10  | 24.77 | 23.21 | 22.14 | 21.07 | 20.27 | 19.72 | 19.06 | 18.90 | 20.91 | 23.92 | 28.51 | 27.75 |
| 15  | 24.51 | 22.99 | 22.00 | 20.93 | 20.15 | 19.58 | 18.97 | 19.33 | 20.49 | 24.07 | 28.14 | 27.41 |
| 20  | 24.20 | 22.92 | 21.85 | 20.77 | 20.09 | 19.46 | 18.90 | 20.00 | 21.62 | 25.05 | 28.06 | 26.93 |
| 25  | 23.97 | 22.73 | 21.67 | 20.68 | 19.97 | 19.38 | 18.81 | 19.67 | 22.36 | 26.70 | 28.42 | 26.47 |
| EOM | 23.69 | 22.54 | 21.35 | 20.50 | 19.91 | 19.27 | 18.72 | 19.40 | 23.27 | 27.89 | 28.41 | 26.20 |

WTR YR 1987      HIGHEST 18.65 MAY 8      LOWEST 28.66 AUG 27

411210104452001 Local number, 14N 066W 10aba01.

LOCATION.--Lat 41°12'10", long 104°45'20", in NE1/4 NW1/4 NE1/4 sec.10, T.14 N., R.66 W., Hydrologic Unit 10190015.

Owner: State of Wyoming.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Depth of well, 190 ft.

DATUM.--Elevation of land-surface datum is about 6,230 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: top of casing, 1.40 ft above land-surface datum.

PERIOD OF RECORD.--April 1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 125.82 ft below land-surface datum, Feb. 13, 1979; lowest, 131.39 ft below land-surface datum, Aug. 3, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Highest water level for the day, from digital recorder

| DAY | OCT    | NOV    | DEC    | JAN    | FEB    | MAR    | APR    | MAY    | JUN    | JUL    | AUG    | SEP    |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 5   | 130.89 | 130.49 | 129.64 | 129.16 | 129.70 | 129.62 | 129.47 | 129.77 | 129.81 | 129.95 | 130.14 | 130.06 |
| 10  | 130.76 | 130.64 | 129.51 | 129.50 | 129.48 | 129.46 | 129.26 | 129.61 | 129.47 | 129.91 | 130.16 | 130.12 |
| 15  | 130.87 | 130.53 | 129.65 | 129.45 | 129.32 | 129.19 | 129.44 | 129.70 | 129.47 | 130.15 | 130.01 | 130.01 |
| 20  | 130.83 | 129.73 | 129.56 | 129.32 | 129.50 | 128.97 | 129.49 | 129.40 | 129.95 | 130.16 | 130.25 | 130.12 |
| 25  | 130.78 | 129.59 | 129.53 | 129.33 | 129.24 | 129.35 | 129.63 | 129.39 | 130.27 | 130.36 | 130.02 | 130.07 |
| EOM | 130.53 | 129.52 | 129.52 | 129.31 | 129.23 | 129.51 | 129.52 | 129.49 | 130.09 | 130.28 | 130.27 | 130.18 |

WTR YR 1987      HIGHEST 128.97 MAR 20      LOWEST 131.01 OCT 6

412343104053101 Local number, 17N 060W 33cbb01.

LOCATION.--Lat 41°23'43", long 104°05'31", in SW1/4 NW1/4 NW1/4 sec.33, T.17 N., R.60 W., Hydrologic Unit 10190016.

Owner: U. S. Geological Survey.

AQUIFER.--Brule Formation.

WELL CHARACTERISTICS.--Depth of well, 275 ft.

DATUM.--Elevation of land-surface datum is about 5,340 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 177.52 ft below land-surface datum, May 30, 31, 1975; lowest, 214.00 ft below land-surface datum, Nov. 14, 15, 16, 17, 18, 19.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Highest water level for the day, from digital recorder

| DAY | OCT    | NOV    | DEC    | JAN    | FEB    | MAR    | APR    | MAY    | JUN    | JUL    | AUG    | SEP    |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 5   | 213.93 | 213.98 | 213.93 | 213.85 | 213.56 | 212.14 | 210.44 | 209.57 | 209.08 | 210.81 | 212.55 | 213.43 |
| 10  | 213.94 | 213.98 | 213.91 | 213.83 | 213.47 | 211.60 | 210.26 | 209.40 | 209.12 | 211.25 | 212.74 | 213.55 |
| 15  | 213.97 | 214.00 | 213.89 | 213.78 | 213.36 | 211.27 | 210.12 | 209.26 | 209.13 | 211.67 | 212.87 | 213.64 |
| 20  | 213.97 | 213.97 | 213.86 | 213.72 | 213.30 | 210.98 | 209.95 | 209.18 | 209.12 | 211.87 | 213.05 | 213.76 |
| 25  | 213.98 | 213.96 | 213.83 | 213.68 | 212.98 | 210.83 | 209.83 | 209.18 | 209.34 | 212.08 | 213.19 | 213.81 |
| EOM | 213.98 | 213.95 | 213.86 | 213.60 | 212.60 | 210.61 | 209.67 | 209.11 | 210.16 | 212.31 | 213.34 | ---    |

WTR YR 1987      HIGHEST 209.08 JUNE 5, 6      LOWEST 214.00 NOV 14, 15, 16, 17, 18, 19



## GROUND-WATER LEVELS

## NIOBRARA COUNTY

424244104202001. Local number, 32N 062W 32bbb01.

LOCATION.--Lat 42°42'44", long 104°20'20", in NW1/4 NW1/4 sec.32, T.32 N., R.62 W., Hydrologic Unit 10150002.

Owner: Richard Pfister.

AQUIFER.--Tertiary Miocene, Arikaree group.

WELL CHARACTERISTICS.--Drilled unused water-table well, 12 in. diameter, galvanized casing, depth 485 ft, cased top 25 ft.

DATUM.--Elevation of land-surface datum is about 4,898 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: bottom edge of recorder shelf, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--May 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 20.93 ft below land-surface datum, June 10, 1970; lowest, 37.56 ft below land-surface datum, Aug. 30, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Highest water level for the day, from digital recorder

| DAY | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR    | MAY   | JUN   | JUL   | AUG   | SEP   |
|-----|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|
| 5   | 35.69 | 35.13 | 34.70 | 34.34 | 34.06 | 33.76 | 33.54  | 33.27 | 34.55 | 34.22 | 35.32 | 34.77 |
| 10  | 35.54 | 35.06 | 34.63 | 34.32 | 33.97 | 33.71 | 33.47  | 33.19 | 33.78 | 33.93 | 34.91 | 34.74 |
| 15  | 35.46 | 34.98 | 34.60 | 34.26 | 33.95 | 33.67 | 33.46  | 33.16 | 33.65 | 35.02 | 36.11 | 34.58 |
| 20  | 35.34 | 34.94 | 34.55 | 34.17 | 33.88 | 33.62 | 33.45  | 33.49 | 33.60 | 34.26 | 35.10 | 34.54 |
| 25  | 35.29 | 34.85 | 34.48 | 34.16 | 33.84 | 33.60 | 33.39  | 34.22 | 33.60 | 34.58 | 34.97 | 34.40 |
| EOM | 35.23 | 34.78 | 34.43 | 34.08 | 33.81 | 33.55 | 33.277 | 33.77 | 34.20 | 34.87 | 34.90 | 34.34 |

WTR YR 1987 HIGHEST 33.14 MAY 16, 18, 19 LOWEST 35.73 OCT 1

## PLATTE COUNTY

420613105024401. Local number, 25N 068W 31AAA01.

LOCATION.--Lat 42°06'13", long 105°02'44", in NE1/4 NE1/4 sec.31, T.25 N., R.68 W., Hydrologic Unit 10180011.

Owner: State of Wyoming.

AQUIFER.--Arikaree Formation.

WELL CHARACTERISTICS.--Depth of well, 400 ft.

DATUM.--Elevation of land-surface datum, 5,242 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: top of casing, 1.50 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 20.13 ft below land-surface datum, Nov. 19, 1986; lowest, 28.93 ft below land-surface datum, Aug. 10, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Highest water level for the day, from digital recorder

| DAY | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5   | 20.93 | 20.39 | 20.47 | 20.40 | 20.60 | 20.43 | 20.56 | 21.42 | 22.22 | 22.12 | 23.07 | 22.89 |
| 10  | 20.83 | 20.42 | 20.48 | 20.56 | 20.43 | 20.42 | 20.57 | 22.14 | 20.58 | 22.43 | 23.53 | 22.70 |
| 15  | 20.83 | 20.18 | 20.55 | 20.54 | 20.38 | 20.30 | 20.70 | 22.76 | 20.52 | 22.64 | 23.94 | 22.52 |
| 20  | 20.68 | 20.30 | 20.53 | 20.47 | 20.42 | 20.21 | 20.93 | 23.04 | 20.74 | 22.82 | 24.16 | 22.47 |
| 25  | 20.59 | 20.28 | 20.52 | 20.56 | 20.43 | 20.38 | 20.95 | 22.51 | 21.12 | 23.04 | 23.82 | 22.43 |
| EOM | 20.60 | 20.35 | 20.55 | 20.47 | 20.45 | 20.45 | 20.91 | 22.10 | 21.81 | 22.79 | 23.43 | 22.90 |

WTR YR 1987 HIGHEST 20.13 NOV 19 LOWEST 24.20 AUG 21

## BIG HORN COUNTY

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION NUMBER  | LOCAL IDENTIFIER            | SITE | DATE     | TIME | DEPTH OF WELL, TOTAL (FEET) | SPECIFIC CONDUCTANCE (US/CM) | PH (STANDARD UNITS) |
|-----------------|-----------------------------|------|----------|------|-----------------------------|------------------------------|---------------------|
| 441449107464801 | 49-091-3cbb01 NEAL WELL     | GW   | 09-29-87 | 1200 | --                          | 1310                         | 8.2                 |
| 441514107580801 | 49-092 MOSEGARD WELL        | GW   | 09-21-87 | 1000 | --                          | 1450                         | 7.3                 |
| 441726108004901 | 50-093 LA BUDDA             | GW   | 09-21-87 | 1400 | 60.00                       | 5100                         | 7.3                 |
| 442346108135701 | 51-095 BULKONGER WELL       | GW   | 09-21-87 | 1700 | --                          | 3800                         | 8.1                 |
| 442620108270801 | 52-096-31beb NICHOLSON WEL  | GW   | 09-23-87 | 1300 | --                          | 870                          | 7.5                 |
| 443020108171001 | 52-095 KILLAM WELL          | GW   | 09-23-87 | 1000 | --                          | 1520                         | 7.4                 |
| 443223107503001 | 53-091-29cbc WHAKY WELL     | GW   | 09-22-87 | 1000 | --                          | 1600                         | 7.2                 |
| 444832108302501 | 56-097-26ca BYRON MUNICIPAL | GW   | 09-23-87 | 1600 | 13.50                       | 1580                         | 7.4                 |

| STATION NUMBER  | DATE     | TEMPERATURE WATER (DEG C) | HARDNESS (MG/L AS CaCO3) | CALCIUM DIS-SOLVED (MG/L AS Ca) | MAGNESIUM, DIS-SOLVED (MG/L AS Mg) | SODIUM, DIS-SOLVED (MG/L AS Na) | SODIUM ADSORPTION RATIO | POTASSIUM, DIS-SOLVED (MG/L AS K) | ALKALINITY LAB (MG/L AS CaCO3) | CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) |
|-----------------|----------|---------------------------|--------------------------|---------------------------------|------------------------------------|---------------------------------|-------------------------|-----------------------------------|--------------------------------|-----------------------------------------|
| 441449107464801 | 09-29-87 | 14.0                      | 22                       | 5.3                             | 2.1                                | 280                             | 27                      | 1.6                               | 210                            | 2.5                                     |
| 441514107580801 | 09-21-87 | 13.5                      | 510                      | 150                             | 33                                 | 120                             | 2                       | 5.1                               | 310                            | 30                                      |
| 441726108004901 | 09-21-87 | 12.5                      | 1100                     | 280                             | 94                                 | 820                             | 11                      | 12                                | 240                            | 23                                      |
| 442346108135701 | 09-21-87 | 11.5                      | 110                      | 31                              | 7.4                                | 640                             | 28                      | 4.0                               | 170                            | 2.6                                     |
| 442620108270801 | 09-23-87 | 14.0                      | 240                      | 61                              | 21                                 | 110                             | 3                       | 5.6                               | 320                            | 20                                      |
| 443020108171001 | 09-23-87 | 13.0                      | 450                      | 130                             | 30                                 | 190                             | 4                       | 3.0                               | 360                            | 28                                      |
| 443223107503001 | 09-22-87 | 13.0                      | 770                      | 230                             | 48                                 | 61                              | 1                       | 2.9                               | 280                            | 34                                      |
| 444832108302501 | 09-23-87 | 14.5                      | 460                      | 100                             | 50                                 | 160                             | 3                       | 3.0                               | 310                            | 24                                      |

| STATION NUMBER  | DATE     | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLORIDE, DIS-SOLVED (MG/L AS CL) | FLUORIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SiO2) | SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) | SOLIDS, DIS-SOLVED (TONS PER AC-FT) | NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) |
|-----------------|----------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|------------------------------------------------|-------------------------------------|------------------------------------------|-------------------------------|
| 441449107464801 | 09-29-87 | 390                              | 30                                | 0.3                              | 6.8                               | 840                                            | 1.1                                 | 1.2                                      | 0.04                          |
| 441514107580801 | 09-21-87 | 380                              | 17                                | 1.0                              | 32                                | 920                                            | 1.3                                 | 9.1                                      | 0.03                          |
| 441726108004901 | 09-21-87 | 2400                             | 120                               | 0.3                              | 9.1                               | 3900                                           | 5.3                                 | 2.8                                      | 0.02                          |
| 442346108135701 | 09-21-87 | 1100                             | 120                               | 1.4                              | 5.3                               | 2000                                           | 2.7                                 | 1.3                                      | 0.02                          |
| 442620108270801 | 09-23-87 | 130                              | 3.6                               | 0.7                              | 33                                | 560                                            | 0.76                                | 2.1                                      | 0.27                          |
| 443020108171001 | 09-23-87 | 410                              | 7.7                               | 2.5                              | 41                                | 1000                                           | 1.4                                 | 9.8                                      | 0.02                          |
| 443223107503001 | 09-22-87 | 550                              | 3.9                               | 0.4                              | 15                                | 1100                                           | 1.5                                 | 3.4                                      | 0.01                          |
| 444832108302501 | 09-23-87 | 440                              | 27                                | 0.7                              | 20                                | 990                                            | 1.3                                 | 3.7                                      | 0.02                          |

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION NUMBER  | DATE     | TIME | DICAMBA (MED-IBEN) (BAN-VEL D) TOTAL (UG/L) | DI-AZINON, TOTAL (UG/L) | ETHION, TOTAL (UG/L) | MALATHION, TOTAL (UG/L) | METHYL PARA-THION, TOTAL (UG/L) | METHYL TRI-THION, TOTAL (UG/L) |
|-----------------|----------|------|---------------------------------------------|-------------------------|----------------------|-------------------------|---------------------------------|--------------------------------|
| 441449107464801 | 09-29-87 | 1200 | 0.03                                        | <0.01                   | <0.01                | <0.01                   | <0.01                           | <0.01                          |
| 441514107580801 | 09-21-87 | 1000 | <0.01                                       | <0.01                   | <0.01                | <0.01                   | <0.01                           | <0.01                          |
| 441726108004901 | 09-21-87 | 1400 | <0.01                                       | --                      | --                   | --                      | --                              | --                             |
| 442346108135701 | 09-21-87 | 1700 | <0.01                                       | <0.01                   | <0.01                | <0.01                   | <0.01                           | <0.01                          |
| 442620108270801 | 09-23-87 | 1300 | <0.01                                       | <0.01                   | <0.01                | <0.01                   | <0.01                           | <0.01                          |
| 443020108171001 | 09-23-87 | 1000 | <0.01                                       | --                      | --                   | --                      | --                              | --                             |
| 443223107503001 | 09-22-87 | 1000 | <0.01                                       | <0.01                   | <0.01                | <0.01                   | <0.01                           | <0.01                          |
| 444832108302501 | 09-23-87 | 1600 | <0.01                                       | <0.01                   | <0.01                | <0.01                   | <0.01                           | <0.01                          |

## GEOLOGIC UNIT (AQUIFER)

111SPBK SPOIL BANK (RECLAIMED COAL MINE AREA)  
 124WSTC WASATCH FORMATION

125FRRS FERRIS FORMATION  
 125FRUN FORT UNION FORMATION

## QUALITY OF GROUND WATER

## BIG HORN COUNTY--Continued

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION         | NUMBER | DATE     | PARA-<br>THION,<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) | TOTAL<br>TRI-<br>THION<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) |
|-----------------|--------|----------|------------------------------------|---------------------------------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|----------------------------|
| 441449107464801 |        | 09-29-87 | <0.01                              | <0.01                                             | <0.01                      | <0.01                            | <0.01                     | <0.01                      | <0.01                      |
| 441514107580801 |        | 09-21-87 | <0.01                              | <0.01                                             | <0.01                      | <0.01                            | <0.01                     | <0.01                      | <0.01                      |
| 441726108004901 |        | 09-21-87 | --                                 | 0.01                                              | <0.01                      | --                               | <0.01                     | <0.01                      | <0.01                      |
| 442346108135701 |        | 09-21-87 | <0.01                              | <0.01                                             | <0.01                      | <0.01                            | <0.01                     | <0.01                      | <0.01                      |
| 442620108270801 |        | 09-23-87 | <0.01                              | <0.01                                             | <0.01                      | <0.01                            | <0.01                     | <0.01                      | <0.01                      |
| 443020108171001 |        | 09-23-87 | --                                 | 0.01                                              | <0.01                      | --                               | <0.01                     | <0.01                      | <0.01                      |
| 443223107503001 |        | 09-22-87 | <0.01                              | <0.01                                             | <0.01                      | <0.01                            | <0.01                     | <0.01                      | <0.01                      |
| 444832108302501 |        | 09-23-87 | <0.01                              | <0.01                                             | <0.01                      | <0.01                            | <0.01                     | <0.01                      | <0.01                      |

## CAMPBELL COUNTY

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION        | NUMBER        | LOCAL<br>IDENT-<br>I-<br>FIER | GEO-<br>LOGIC<br>UNIT | SITE | DATE     | TIME | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) |
|----------------|---------------|-------------------------------|-----------------------|------|----------|------|---------------------------------------------------|--------------------------------|-------------------------------------|----------------------------------------|
| 40713105202601 | 48N71W24CBC01 | CA801 WELL                    | 124WSTC               | GW   | 10-14-86 | 0900 | 3900                                              | 6.3                            | --                                  | 2200                                   |
|                |               |                               |                       | GW   | 07-08-87 | 1400 | 3780                                              | 6.4                            | 1.1                                 | 2000                                   |
| 40715105202101 | 48N71W24CBD01 | CA723 WELL                    | 124WSTC               | GW   | 10-13-86 | 1330 | 5400                                              | 6.6                            | --                                  | 2700                                   |
|                |               |                               | 124WSTC               | GW   | 07-08-87 | 1030 | 5450                                              | 6.7                            | 3.1                                 | 2400                                   |
| 40717105202302 | 48N71W24CBD02 | CA724 WELL                    | 124WSTC               | GW   | 10-13-86 | 1015 | 6400                                              | 6.2                            | --                                  | 3900                                   |
|                |               |                               | 124WSTC               | GW   | 07-07-87 | 1420 | 6100                                              | 6.1                            | 2.0                                 | 3300                                   |

| STATION        | NUMBER | DATE     | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>WH WAT<br>TOTAL<br>FIELD<br>MG/L AS<br>CACO3 | CARBON<br>DIOXIDE<br>DIS-<br>SOLVED<br>(MG/L<br>AS CO2) | SULFIDE<br>TOTAL<br>(MG/L<br>AS S) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) |
|----------------|--------|----------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------|------------------------------------|-----------------------------------------------|-----------------------------------------------------|
| 40713105202601 |        | 10-14-86 | 490                                          | 240                                                  | 290                                          | 3                                       | 27                                                  | 460                                                             | 447                                                     | <0.5                               | 2100                                          | 54                                                  |
|                |        | 07-08-87 | 450                                          | 200                                                  | 270                                          | 3                                       | 33                                                  | 395                                                             | 334                                                     | <0.5                               | 2100                                          | 34                                                  |
| 40715105202101 |        | 10-13-86 | 580                                          | 300                                                  | 540                                          | 5                                       | 34                                                  | 750                                                             | 357                                                     | <0.5                               | 2700                                          | 84                                                  |
|                |        | 07-08-87 | 510                                          | 260                                                  | 570                                          | 5                                       | 39                                                  | 975                                                             | 404                                                     | <0.5                               | 2900                                          | 56                                                  |
| 40717105202302 |        | 10-13-86 | 830                                          | 450                                                  | 440                                          | 3                                       | 33                                                  | 1040                                                            | 1390                                                    | 0.8                                | 3100                                          | 88                                                  |
|                |        | 07-07-87 | 690                                          | 370                                                  | 440                                          | 3                                       | 42                                                  | 828                                                             | 1430                                                    | <0.5                               | 3300                                          | 83                                                  |

| STATION        | NUMBER | DATE     | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS NH4) | PHOS-<br>PHORUS,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P) | PHOS-<br>PHATE,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS PO4) | CARBON,<br>ORGANIC<br>DIS-<br>SOLVED<br>(MG/L<br>AS C) |
|----------------|--------|----------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| 40713105202601 |        | 10-14-86 | 0.2                                                | 24                                                | 3500                                                                | 4.8                                                 | --                                                            | 1.1                                                           | 1.4                                                             | 0.044                                                          | 0.13                                                            | 36                                                     |
|                |        | 07-08-87 | 0.2                                                | 58                                                | 3400                                                                | 4.6                                                 | 0.15                                                          | 1.0                                                           | 1.3                                                             | 0.008                                                          | 0.02                                                            | --                                                     |
| 40715105202101 |        | 10-13-86 | 0.4                                                | 12                                                | 4700                                                                | 6.4                                                 | --                                                            | 1.1                                                           | 1.4                                                             | 0.017                                                          | 0.05                                                            | 50                                                     |
|                |        | 07-08-87 | 0.4                                                | 22                                                | 5000                                                                | 6.7                                                 | 48                                                            | 1.2                                                           | 1.5                                                             | --                                                             | --                                                              | --                                                     |
| 40717105202302 |        | 10-13-86 | 0.2                                                | 30                                                | 5600                                                                | 7.6                                                 | --                                                            | 17                                                            | 22                                                              | 0.030                                                          | 0.09                                                            | 280                                                    |
|                |        | 07-07-87 | 0.2                                                | 91                                                | 5600                                                                | 7.5                                                 | 56                                                            | 20                                                            | 26                                                              | --                                                             | --                                                              | --                                                     |

## CAMPBELL COUNTY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION NUMBER  | DATE     | TIME | ALUM-<br>INUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AL) | ANTI-<br>MONY,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SB) | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA) | BORON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS B) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU) |
|-----------------|----------|------|-----------------------------------------------------|-----------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------|
| 440713105202601 | 10-14-86 | 0900 | 20                                                  | <1                                                  | 1                                            | 100                                          | 380                                        | 1                                            | --                                                  | 4                                            |
|                 | 07-08-87 | 1400 | 50                                                  | <1                                                  | <1                                           | 100                                          | --                                         | <1                                           | <10                                                 | 15                                           |
| 440715105202101 | 10-13-86 | 1330 | 30                                                  | <1                                                  | 1                                            | 100                                          | 120                                        | <1                                           | --                                                  | 18                                           |
|                 | 07-08-87 | 1030 | 150                                                 | 1                                                   | <1                                           | 200                                          | --                                         | <1                                           | 20                                                  | 36                                           |
| 440717105202302 | 10-13-86 | 1015 | 130                                                 | <1                                                  | 1                                            | 100                                          | 670                                        | 1                                            | --                                                  | 28                                           |
|                 | 07-07-87 | 1420 | 380                                                 | 1                                                   | <1                                           | 100                                          | --                                         | <1                                           | 20                                                  | 35                                           |

| STATION NUMBER  | DATE     | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | STRON-<br>TIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SR) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) | URANIUM<br>NATURAL<br>DIS-<br>SOLVED<br>(UG/L<br>AS U) |
|-----------------|----------|--------------------------------------------|--------------------------------------------|------------------------------------------------------|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|------------------------------------------------------|--------------------------------------------|--------------------------------------------------------|
| 440713105202601 | 10-14-86 | 100                                        | <5                                         | 390                                                  | <1                                                    | 11                                           | 3                                                   | 7600                                                 | 120                                        | 1.9                                                    |
|                 | 07-08-87 | 90                                         | <5                                         | 360                                                  | <1                                                    | <1                                           | <1                                                  | 7300                                                 | 50                                         | --                                                     |
| 440715105202101 | 10-13-86 | 1700                                       | <5                                         | 1000                                                 | 4                                                     | 49                                           | 140                                                 | 12000                                                | 250                                        | 84                                                     |
|                 | 07-08-87 | 120                                        | 11                                         | 1200                                                 | <1                                                    | 34                                           | 32                                                  | 12000                                                | 130                                        | --                                                     |
| 440717105202302 | 10-13-86 | 2300                                       | 7                                          | 2400                                                 | 3                                                     | 48                                           | 330                                                 | 13000                                                | 1200                                       | 49                                                     |
|                 | 07-07-87 | 180                                        | 30                                         | 2600                                                 | <1                                                    | 33                                           | 310                                                 | 11000                                                | 290                                        | --                                                     |

## CARBON COUNTY

| STATION NUMBER  | LOCAL<br>IDENT-<br>IFIER | GEO-<br>LOGIC<br>UNIT | SITE | DATE     | TIME | DEPTH<br>OF<br>WELL,<br>TOTAL<br>(FEET) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS) |
|-----------------|--------------------------|-----------------------|------|----------|------|-----------------------------------------|---------------------------------------------------|--------------------------------|
| 415430106493801 | 22-84-01BCB 01           | 111SPBK               | GW   | 04-08-87 | 1400 | 150.00                                  | 5600                                              | 6.9                            |
| 415535106482301 | 23-083-31BBB01           | 125FRRS               | GW   | 04-08-87 | 1600 | 140.00                                  | 3400                                              | 7.1                            |

| STATION NUMBER  | DATE     | TEMPER-<br>ATURE<br>WATER<br>(DEG C) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>AS<br>CACO3) | CARBON<br>DIOXIDE<br>DIS-<br>SOLVED<br>(MG/L<br>AS CO2) |
|-----------------|----------|--------------------------------------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|----------------------------------------|---------------------------------------------------------|
| 415430106493801 | 04-08-87 | 14.0                                 | 1500                                   | 220                                          | 220                                                  | 980                                          | 11                                      | 17                                                  | 1100                                   | 268                                                     |
| 415535106482301 | 04-08-87 | --                                   | 830                                    | 120                                          | 130                                                  | 540                                          | 8                                       | 10                                                  | 710                                    | 109                                                     |

| STATION NUMBER  | DATE     | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|-----------------|----------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|
| 415430106493801 | 04-08-87 | 2400                                          | 72                                                  | 0.6                                                | 12                                                | 4600                                                                | 6.2                                                 | <0.1                                                          | 0.04                                        |
| 415535106482301 | 04-08-87 | 1200                                          | 21                                                  | 0.4                                                | 15                                                | 2500                                                                | 3.3                                                 | <0.1                                                          | 0.04                                        |

## QUALITY OF GROUND WATER

## CARBON COUNTY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION NUMBER  | DATE     | TIME | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS) | BORON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS B) | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR) | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE) | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB) |
|-----------------|----------|------|----------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------------------------|--------------------------------------------|--------------------------------------------|
| 415430106493801 | 04-08-87 | 1400 | 3                                            | 120                                        | 10                                           | <10                                                 | 210                                        | <100                                       |
| 415535106482301 | 04-08-87 | 1600 | <1                                           | 140                                        | <10                                          | <10                                                 | 500                                        | <100                                       |

| STATION NUMBER  | DATE     | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) | CARBON,<br>ORGANIC<br>DIS-<br>SOLVED<br>(MG/L<br>AS C) | CARBON,<br>ORGANIC<br>SUS-<br>PENDE<br>TOTAL<br>(MG/L<br>AS C) |
|-----------------|----------|----------------------------------------------|-------------------------------------------------------|-----------------------------------------------------|--------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------|
| 415430106493801 | 04-08-87 | <0.1                                         | 4                                                     | <1                                                  | 70                                         | 17                                                     | 0.2                                                            |
| 415535106482301 | 04-08-87 | <0.1                                         | <1                                                    | <1                                                  | 30                                         | 14                                                     | 0.2                                                            |

## FREMONT COUNTY

| STATION NUMBER  | LOCAL<br>IDENT-<br>IFIER | SITE | DATE     | TIME | DEPTH<br>OF<br>WELL,<br>TOTAL<br>(FEET) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>LAB<br>(US/CM) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) |
|-----------------|--------------------------|------|----------|------|-----------------------------------------|----------------------------------------------------------|----------------------------------------|
| 422849107291401 | 29-89-16ddc01            | GW   | 08-21-87 | 1310 | --                                      | 576                                                      | 4                                      |
| 430335108221301 | T1N-R4E-14dcb01          | GW   | 08-19-87 | 1445 | 565.00                                  | 618                                                      | 6                                      |
| 431107108180501 | 02N005E04BBB 1           | GW   | 08-19-87 | 1750 | 89.00                                   | 1340                                                     | 37                                     |
| 440414108223301 | T1N-R4E-11ccd01          | GW   | 08-19-87 | 1445 | 80.00                                   | 629                                                      | 35                                     |

| STATION NUMBER  | DATE     | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) |
|-----------------|----------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|
| 422849107291401 | 08-21-87 | 0.90                                         | 0.40                                                 | 140                                          | 32                                      | 1.5                                                 | 190                                             | 74                                            |
| 430335108221301 | 08-19-87 | 1.8                                          | 0.40                                                 | 140                                          | 26                                      | 0.3                                                 | 180                                             | 110                                           |
| 431107108180501 | 08-19-87 | 14                                           | 0.40                                                 | 270                                          | 20                                      | 0.5                                                 | 73                                              | 470                                           |
| 440414108223301 | 08-19-87 | 7.8                                          | 3.7                                                  | 140                                          | 11                                      | 1.7                                                 | 270                                             | 50                                            |

| STATION NUMBER  | DATE     | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|-----------------|----------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|
| 422849107291401 | 08-21-87 | 20                                                  | 0.3                                                | 39                                                | 390                                                                 | 0.53                                                | 0.2                                                           | 0.03                                        |
| 430335108221301 | 08-19-87 | 7.7                                                 | 0.7                                                | 9.8                                               | 380                                                                 | 0.51                                                | 0.1                                                           | 0.01                                        |
| 431107108180501 | 08-19-87 | 41                                                  | 1.4                                                | 7.0                                               | 850                                                                 | 1.2                                                 | 0.2                                                           | 0.01                                        |
| 440414108223301 | 08-19-87 | 4.2                                                 | 0.8                                                | 14                                                | 380                                                                 | 0.52                                                | 1.4                                                           | 0.01                                        |

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION NUMBER  | DATE     | TIME | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) |
|-----------------|----------|------|-----------------------------------------------------------------|--------------------------------------------------------------|----------------------------|---------------------------|----------------------------|----------------------------|
| 422849107291401 | 08-21-87 | 1310 | <0.01                                                           | <0.01                                                        | <0.01                      | <0.01                     | <0.01                      | <0.01                      |
| 430335108221301 | 08-19-87 | 1445 | <0.01                                                           | <0.01                                                        | <0.01                      | <0.01                     | <0.01                      | <0.01                      |
| 431107108180501 | 08-19-87 | 1750 | <0.01                                                           | <0.01                                                        | <0.01                      | <0.01                     | <0.01                      | <0.01                      |
| 440414108223301 | 08-19-87 | 1445 | <0.01                                                           | <0.01                                                        | <0.01                      | <0.01                     | <0.01                      | <0.01                      |

## NATRONA COUNTY

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION         | NUMBER        | LOCAL<br>IDENT-<br>I-<br>FIER | SITE | DATE     | TIME | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>LAB<br>(US/CM) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) |
|-----------------|---------------|-------------------------------|------|----------|------|----------------------------------------------------------|----------------------------------------|
| 423536106392401 | 30-82-03ccc01 |                               | GW   | 09-01-87 | 1245 | 4350                                                     | 1600                                   |
| 423648106375701 | 31-81-35bdc01 |                               | GW   | 09-01-87 | 1205 | 1230                                                     | 510                                    |

| STATION         | NUMBER   | DATE | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) |
|-----------------|----------|------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------------------------------------------|
| 423536106392401 | 09-01-87 |      | 400                                          | 150                                                  | 540                                          | 6                                       | 8.3                                                 | 420                                             | 2200                                          |
| 423648106375701 | 09-01-87 |      | 130                                          | 45                                                   | 87                                           | 2                                       | 11                                                  | 350                                             | 310                                           |

| STATION         | NUMBER   | DATE | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|-----------------|----------|------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|
| 423536106392401 | 09-01-87 |      | 44                                                  | 0.5                                                | 18                                                | 3600                                                                | 4.9                                                 | 3.6                                                           | 0.03                                        |
| 423648106375701 | 09-01-87 |      | 16                                                  | 0.8                                                | 43                                                | 850                                                                 | 1.2                                                 | 2.0                                                           | 0.01                                        |

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION         | NUMBER   | DATE | TIME | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) |
|-----------------|----------|------|------|-----------------------------------------------------------------|--------------------------------------------------------------|----------------------------|---------------------------|----------------------------|----------------------------|
| 423536106392401 | 09-01-87 |      | 1245 | <0.01                                                           | 0.01                                                         | <0.01                      | <0.01                     | <0.01                      | <0.01                      |
| 423648106375701 | 09-01-87 |      | 1205 | <0.01                                                           | 0.04                                                         | <0.01                      | 0.14                      | <0.01                      | <0.01                      |

## PARK COUNTY

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION         | NUMBER         | LOCAL<br>IDENT-<br>I-<br>FIER | GEO-<br>LOGIC<br>UNIT | SITE | DATE     | TIME | DEPTH<br>OF<br>WELL,<br>TOTAL<br>(FEET) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>LAB<br>(US/CM) |
|-----------------|----------------|-------------------------------|-----------------------|------|----------|------|-----------------------------------------|----------------------------------------------------------|
| 440732108535601 | 48-100-18      |                               |                       | GW   | 08-10-87 | 1145 | 255.00                                  | 1400                                                     |
| 443253109045101 | 53-102-25aad01 |                               |                       | GW   | 08-08-87 | 1145 | --                                      | 1130                                                     |
| 444126108513401 | 54-100-02abb01 |                               |                       | GW   | 08-07-87 | 0815 | 50.00                                   | 884                                                      |
| 444147108472801 | 55-99-33cdb01  |                               |                       | GW   | 08-07-87 | 0915 | --                                      | 786                                                      |
| 444217108390900 | 55N098W34BCB01 |                               | 125FRUN               | GW   | 08-06-87 | 1315 | 100.00                                  | 1510                                                     |
| 444425108483701 | 55-99-17cdd01  |                               |                       | GW   | 08-07-87 | 1100 | 21.00                                   | 738                                                      |
| 445744109051901 | 58-101-31dad01 |                               |                       | GW   | 08-17-87 | 0915 | 60.00                                   | 413                                                      |



## QUALITY OF GROUND WATER

## PARK COUNTY--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION         | NUMBER | DATE     | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>LAB<br>(MG/L<br>AS<br>CACO3) |
|-----------------|--------|----------|----------------------------------------|----------------------------------------------|------------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------------------|-------------------------------------------------|
| 440732108535601 |        | 08-10-87 | 680                                    | 110                                          | 99                                                   | 79                                           | 1                                       | 12                                                  | 310                                             |
| 443253109045101 |        | 08-08-87 | 590                                    | 170                                          | 40                                                   | 31                                           | 0.6                                     | 2.7                                                 | 130                                             |
| 444126108513401 |        | 08-07-87 | 320                                    | 92                                           | 23                                                   | 81                                           | 2                                       | 2.7                                                 | 300                                             |
| 444147108472801 |        | 08-07-87 | 210                                    | 35                                           | 29                                                   | 95                                           | 3                                       | 2.1                                                 | 170                                             |
| 444217108390900 |        | 08-06-87 | 120                                    | 12                                           | 23                                                   | 310                                          | 12                                      | 4.5                                                 | 310                                             |
| 444425108483701 |        | 08-07-87 | 260                                    | 49                                           | 33                                                   | 58                                           | 2                                       | 2.3                                                 | 260                                             |
| 445744109051901 |        | 08-17-87 | 200                                    | 54                                           | 16                                                   | 12                                           | 0.4                                     | 2.7                                                 | 190                                             |

| STATION         | NUMBER | DATE     | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F) | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SiO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>AC-FT) | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) |
|-----------------|--------|----------|-----------------------------------------------|-----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|
| 440732108535601 |        | 08-10-87 | 500                                           | 5.7                                                 | 0.4                                                | 7.4                                               | 1000                                                                | 1.4                                                 | 0.4                                                           | 0.02                                        |
| 443253109045101 |        | 08-08-87 | 490                                           | 3.5                                                 | 1.3                                                | 37                                                | 850                                                                 | 1.2                                                 | 0.8                                                           | 0.01                                        |
| 444126108513401 |        | 08-07-87 | 170                                           | 6.8                                                 | 0.4                                                | 28                                                | 580                                                                 | 0.79                                                | 3.1                                                           | 0.03                                        |
| 444147108472801 |        | 08-07-87 | 190                                           | 7.6                                                 | 0.8                                                | 29                                                | 490                                                                 | 0.67                                                | 5.4                                                           | 0.02                                        |
| 444217108390900 |        | 08-06-87 | 440                                           | 12                                                  | 0.7                                                | 15                                                | 1000                                                                | 1.4                                                 | 5.1                                                           | 0.02                                        |
| 444425108483701 |        | 08-07-87 | 94                                            | 6.7                                                 | 0.7                                                | 21                                                | 420                                                                 | 0.57                                                | 6.5                                                           | 0.02                                        |
| 445744109051901 |        | 08-17-87 | 21                                            | 1.8                                                 | 0.2                                                | 14                                                | 240                                                                 | 0.32                                                | 2.7                                                           | 0.01                                        |

## PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION         | NUMBER | DATE     | TIME | DICAMBA<br>(MED-<br>IBEN)<br>(BAN-<br>VEL D)<br>TOTAL<br>(UG/L) | PICLO-<br>RAM<br>(TOR-<br>DON)<br>(AMDON)<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) |
|-----------------|--------|----------|------|-----------------------------------------------------------------|--------------------------------------------------------------|----------------------------|---------------------------|----------------------------|----------------------------|
| 440732108535601 |        | 08-10-87 | 1145 | <0.01                                                           | <0.01                                                        | <0.01                      | <0.01                     | <0.01                      | <0.01                      |
| 443253109045101 |        | 08-08-87 | 1145 | <0.01                                                           | <0.01                                                        | <0.01                      | <0.01                     | <0.01                      | <0.01                      |
| 444126108513401 |        | 08-07-87 | 0815 | <0.01                                                           | <0.01                                                        | <0.01                      | <0.01                     | <0.01                      | <0.01                      |
| 444147108472801 |        | 08-07-87 | 0915 | 0.13                                                            | 0.01                                                         | <0.01                      | <0.01                     | <0.01                      | <0.01                      |
| 444217108390900 |        | 07-07-87 | 1520 | <0.01                                                           | 0.02                                                         | <0.01                      | <0.01                     | <0.01                      | <0.01                      |
|                 |        | 08-06-87 | 1315 | <0.01                                                           | <0.01                                                        | <0.01                      | <0.01                     | <0.01                      | <0.01                      |
| 444425108483701 |        | 08-07-87 | 1100 | <0.01                                                           | <0.01                                                        | <0.01                      | <0.01                     | <0.01                      | <0.01                      |
| 445744109051901 |        | 08-17-87 | 0915 | <0.01                                                           | <0.01                                                        | <0.01                      | <0.01                     | <0.01                      | <0.01                      |

## QUALITY OF GROUND WATER

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## WASHAKIE COUNTY

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION NUMBER  | LOCAL IDENTIFIER | SITE | DATE     | TIME | DEPTH OF WELL, TOTAL (FEET) | SPECIFIC CONDUCTANCE LAB (US/CM) |
|-----------------|------------------|------|----------|------|-----------------------------|----------------------------------|
| 435724108010901 | 46-93-15bdd01    | GW   | 08-17-87 | 1610 | 65.00                       | 2200                             |
| 435724108011601 | 46-93-15bcc01    | GW   | 08-17-87 | 1545 | 385.00                      | 2270                             |
| 440319107542301 | 47-92-09cbc01    | GW   | 08-09-87 | 1300 | --                          | 2190                             |
| 440400107533601 | 47-92-04dcd01    | GW   | 08-09-87 | 1015 | --                          | 1220                             |
| 440915107532501 | 48-92-04ddc01    | GW   | 08-10-87 | 1545 | 135.00                      | 4090                             |

| STATION NUMBER  | DATE     | HARDNESS (MG/L AS CaCO3) | CALCIUM DIS-SOLVED (MG/L AS Ca) | MAGNESIUM, DIS-SOLVED (MG/L AS Mg) | SODIUM, DIS-SOLVED (MG/L AS Na) | SODIUM ADSORPTION RATIO | POTASSIUM, DIS-SOLVED (MG/L AS K) | ALKALINITY LAB (MG/L AS CaCO3) | SULFATE DIS-SOLVED (MG/L AS SO4) |
|-----------------|----------|--------------------------|---------------------------------|------------------------------------|---------------------------------|-------------------------|-----------------------------------|--------------------------------|----------------------------------|
| 435724108010901 | 08-17-87 | 310                      | 79                              | 28                                 | 420                             | 11                      | 5.9                               | 360                            | 720                              |
| 435724108011601 | 08-17-87 | 80                       | 24                              | 4.9                                | 470                             | 24                      | 2.9                               | 230                            | 770                              |
| 440319107542301 | 08-09-87 | 350                      | 61                              | 47                                 | 370                             | 9                       | 6.2                               | 170                            | 870                              |
| 440400107533601 | 08-09-87 | 37                       | 10                              | 2.9                                | 270                             | 20                      | 2.1                               | 420                            | 96                               |
| 440915107532501 | 08-10-87 | 680                      | 160                             | 67                                 | 740                             | 13                      | 6.7                               | 240                            | 1900                             |

| STATION NUMBER  | DATE     | CHLORIDE, DIS-SOLVED (MG/L AS CL) | FLUORIDE, DIS-SOLVED (MG/L AS F) | SILICA, DIS-SOLVED (MG/L AS SiO2) | SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) | SOLIDS, DIS-SOLVED (TONS PER AC-FT) | NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) | PHOSPHORUS, TOTAL (MG/L AS P) |
|-----------------|----------|-----------------------------------|----------------------------------|-----------------------------------|------------------------------------------------|-------------------------------------|------------------------------------------|-------------------------------|
| 435724108010901 | 08-17-87 | 73                                | 0.8                              | 26                                | 1600                                           | 2.1                                 | 6.2                                      | 0.02                          |
| 435724108011601 | 08-17-87 | 76                                | 1.7                              | 6.3                               | 1500                                           | 2.0                                 | 1.2                                      | 0.01                          |
| 440319107542301 | 08-09-87 | 35                                | 0.7                              | 27                                | 1500                                           | 2.1                                 | 12                                       | 0.01                          |
| 440400107533601 | 08-09-87 | 72                                | 1.9                              | 7.7                               | 710                                            | 0.97                                | 0.9                                      | 0.02                          |
| 440915107532501 | 08-10-87 | 140                               | 0.5                              | 4.7                               | 3200                                           | 4.3                                 | 0.1                                      | 0.02                          |

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

| STATION NUMBER  | DATE     | TIME | DICAMBA (MEDIBEN) (BAN-VEL D) TOTAL (UG/L) | PICLO-RAM (TOR-DON) (AMDON) TOTAL (UG/L) | SILVEX, TOTAL (UG/L) | 2,4-D, TOTAL (UG/L) | 2, 4-DP TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) |
|-----------------|----------|------|--------------------------------------------|------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| 435724108010901 | 08-17-87 | 1610 | <0.01                                      | 0.01                                     | <0.01                | <0.01               | <0.01                | <0.01                |
| 435724108011601 | 08-17-87 | 1545 | <0.01                                      | 0.04                                     | <0.01                | <0.01               | <0.01                | <0.01                |
| 440319107542301 | 08-09-87 | 1300 | <0.01                                      | 0.02                                     | <0.01                | <0.01               | <0.01                | <0.01                |
| 440400107533601 | 08-09-87 | 1015 | 0.03                                       | 0.16                                     | <0.01                | <0.01               | <0.01                | <0.01                |
| 440915107532501 | 08-10-87 | 1545 | <0.01                                      | 0.02                                     | <0.01                | 0.13                | <0.01                | <0.01                |

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## FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

| Multiply inch-pound units                  | By                     | To obtain SI units                               |
|--------------------------------------------|------------------------|--------------------------------------------------|
| <i>Length</i>                              |                        |                                                  |
| inches (in)                                | $2.54 \times 10^1$     | millimeters (mm)                                 |
|                                            | $2.54 \times 10^{-2}$  | meters (m)                                       |
| feet (ft)                                  | $3.048 \times 10^{-1}$ | meters (m)                                       |
| miles (mi)                                 | $1.609 \times 10^0$    | kilometers (km)                                  |
| <i>Area</i>                                |                        |                                                  |
| acres                                      | $4.047 \times 10^3$    | square meters (m <sup>2</sup> )                  |
|                                            | $4.047 \times 10^{-1}$ | square hectometers (hm <sup>2</sup> )            |
|                                            | $4.047 \times 10^{-3}$ | square kilometers (km <sup>2</sup> )             |
| square miles (mi <sup>2</sup> )            | $2.590 \times 10^0$    | square kilometers (km <sup>2</sup> )             |
| <i>Volume</i>                              |                        |                                                  |
| gallons (gal)                              | $3.785 \times 10^0$    | liters (L)                                       |
|                                            | $3.785 \times 10^0$    | cubic decimeters (dm <sup>3</sup> )              |
|                                            | $3.785 \times 10^{-3}$ | cubic meters (m <sup>3</sup> )                   |
| million gallons                            | $3.785 \times 10^3$    | cubic meters (m <sup>3</sup> )                   |
|                                            | $3.785 \times 10^{-3}$ | cubic hectometers (hm <sup>3</sup> )             |
| cubic feet (ft <sup>3</sup> )              | $2.832 \times 10^1$    | cubic decimeters (dm <sup>3</sup> )              |
|                                            | $2.832 \times 10^{-2}$ | cubic meters (m <sup>3</sup> )                   |
| cfs-days                                   | $2.447 \times 10^3$    | cubic meters (m <sup>3</sup> )                   |
|                                            | $2.447 \times 10^{-3}$ | cubic hectometers (hm <sup>3</sup> )             |
| acre-feet (acre-ft)                        | $1.233 \times 10^3$    | cubic meters (m <sup>3</sup> )                   |
|                                            | $1.233 \times 10^{-3}$ | cubic hectometers (hm <sup>3</sup> )             |
|                                            | $1.233 \times 10^{-6}$ | cubic kilometers (km <sup>3</sup> )              |
| <i>Flow</i>                                |                        |                                                  |
| cubic feet per second (ft <sup>3</sup> /s) | $2.832 \times 10^1$    | liters per second (L/s)                          |
|                                            | $2.832 \times 10^1$    | cubic decimeters per second (dm <sup>3</sup> /s) |
|                                            | $2.832 \times 10^{-2}$ | cubic meters per second (m <sup>3</sup> /s)      |
| gallons per minute (gal/min)               | $6.309 \times 10^{-2}$ | liters per second (L/s)                          |
|                                            | $6.309 \times 10^{-2}$ | cubic decimeters per second (dm <sup>3</sup> /s) |
|                                            | $6.309 \times 10^{-5}$ | cubic meters per second (m <sup>3</sup> /s)      |
| million gallons per day                    | $4.381 \times 10^1$    | cubic decimeters per second (dm <sup>3</sup> /s) |
|                                            | $4.381 \times 10^{-2}$ | cubic meters per second (m <sup>3</sup> /s)      |
| <i>Mass</i>                                |                        |                                                  |
| tons (short)                               | $9.072 \times 10^{-1}$ | megagrams (Mg) or metric tons                    |



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