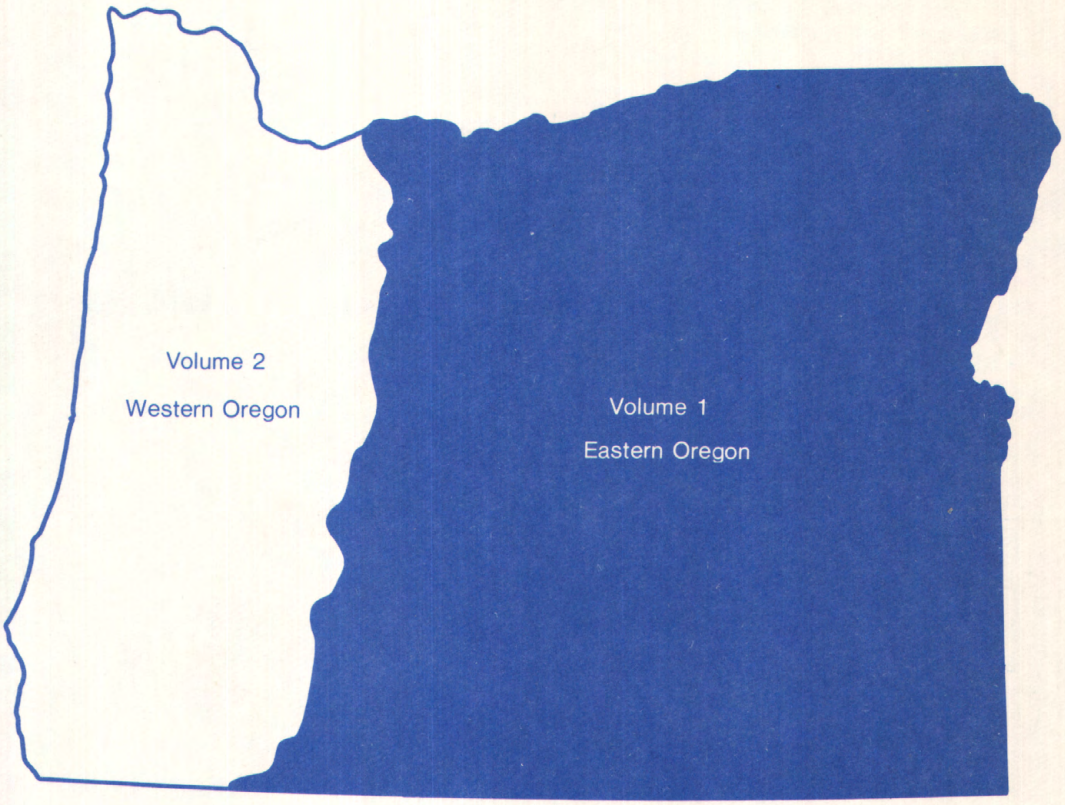
Water Resources Data Oregon Water Year 1981

Volume 1. Eastern Oregon



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OR-81-1
Prepared in cooperation with the Oregon Water Resources Department and with other agencies

CALENDAR FOR WATER YEAR 1981

1980

OCTOBER

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1981

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Water Resources Data
Oregon
Water Year 1981

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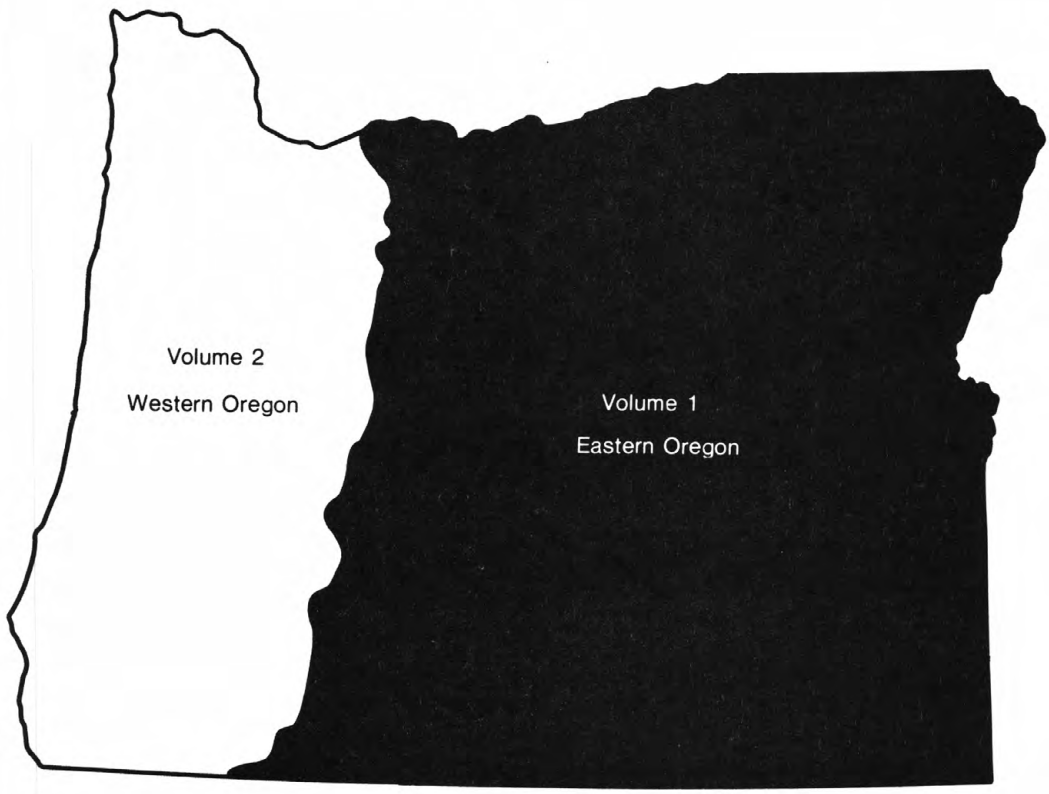

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OR-81-1
Prepared in cooperation with the Oregon Water Resources Department and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For additional information write to
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Portland, Oregon 97232

1983

PREFACE

This report was prepared by the U.S. Geological Survey in cooperation with the State of Oregon and with other agencies by personnel of the Oregon district of Water Resources Division under the supervision of S. F. Kapustka, District Chief, and J. D. Bredehoeft, Regional Hydrologist, Western Region.

This report is one of a series issued State by State under the general direction of P. Cohen, Chief Hydrologist, and J. E. Biesecker, Assistant Chief Hydrologist for Scientific Publications and Data Management.

Data for the State of Oregon are in two volumes as follows:

Volume 1: Eastern Oregon

Volume 2: Western Oregon

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15. Supplementary Notes

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16. Abstract (Limit: 200 words)

Water Resources Data for the 1981 water year for Oregon consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality in wells and springs. This report, in two volumes, contains discharge records for 270 gaging stations; stage only records for 12 gaging stations; stage and contents for 44 lakes and reservoirs; water quality for 90 gaging stations, water levels for 66 observation wells; and water quality for 8 precipitation stations. Also included are 50 crest-stage partial-record stations. 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 co-operating State and Federal agencies in Oregon.

17. Document Analysis a. Descriptors

*Oregon, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment, Water temperatures, Sampling sites, Water levels, Water analyses.

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

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

LETTER AFTER STATION NAME DESIGNATES TYPE OF DATA:
(D) DISCHARGE, (E) ELEVATION OR CONTENTS, (C) CHEMICAL,
(B) BIOLOGICAL AND MICROBIOLOGICAL, (T) WATER TEMPERATURE,
(S) SEDIMENT

WATER RESOURCES DATA FOR OREGON, 1981

INTRODUCTION

Water resources data for the 1981 water year for Oregon consists of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; water-levels and water quality of wells and springs; and water quality of precipitation. This report, in two volumes, contains discharge records for 270 gaging stations; stage only records for 12 gaging stations; stage and contents for 44 lakes and reservoirs; water quality for 90 gaging stations; and water levels for 66 observation wells; and water quality for 8 precipitation stations. Also included are data for 50 crest-stage partial-record stations. Locations of these sites, except for precipitation stations, are shown on figures 2, 3, 4, and 5. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements and analyses. 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 Oregon.

Records of discharge 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 multi-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 are published from 1935 to 1974 in a series of water-supply papers entitled, "Ground-water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from the Branch of Distribution, U.S. Geological Survey, 1200 Eads Street, Arlington, VA 22202.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published as an official Survey report 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 volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report OR-81-1." For archiving and general distribution, the reports for water years 1971-74 are also identified as water-data reports. These water-data reports are for sale, in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. Additional information, including current prices, for ordering specific reports may be obtained from the district chief at the address given on the back of the title page or by telephone (503) 231-2009.

COOPERATION

The U.S. Geological Survey and organizations of the State of Oregon have had cooperative agreements for the systematic collection of surface-water records since 1905. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreements with the Survey are:

Oregon Water Resources Department, James E. Sexson, Director.

Oregon Department of Fish and Wildlife, John R. Donaldson, Director.

Oregon Department of Transportation, Highway Division, H.S.Coulter, State Highway Engineer.

Coos, Douglas, Lane, Multnomah, Wasco, Counties, and Clark County, Washington.

Lane Council of Governments

Cities of Coos Bay-North Bend, Eugene, McMinnville, Medford, Portland, Reedsport, Salem.

Burnt River Irrigation District.

Umatilla Tribal Council.

Warm Springs Tribal Council.

Assistance in the form of funds or services was given by the Forest Service, Soil Conservation Service, U.S. Department of Agriculture; Corps of Engineers, U.S. Army; Bonneville Power Administration, U.S. Department of Energy; Bureau of Reclamation, Fish and Wildlife Service, Bureau of Land Management, and National Park Service, U.S. Department of the Interior; Eugene Water & Electric Board; Pacific Power & Light Co.; Portland General Electric Co.; Idaho Power Co., Idaho; Clark County Department of Public Works, Washington.

GENERAL HYDROLOGIC CONDITIONS

The hydrology of Oregon is influenced by five mountain ranges. These ranges divide the state into drainage basins and greatly affect the distribution of precipitation. The Cascade Range provides a natural division between western and eastern Oregon. Hydrologic patterns are generally uniform from drainage basin to drainage basin throughout western Oregon, whereas in eastern Oregon hydrologic patterns vary widely between drainage basins.

Western Oregon Hydrology

Western Oregon, which composes about one-third of the total area of the state, has a climate characterized by moderate temperatures, wet winters, and dry summers. About 80 percent of the precipitation occurs between October and March. Annual precipitation in western Oregon ranges from about 20 in. per year in the lower elevations in the southern part of the area to about 200 in. per year in the Coast and Cascade Ranges. In general, streamflow characteristics are similar throughout western Oregon, with most of the runoff and flooding on both large and small streams being caused by winter rains. Major floods have occurred when winter rains combine with melting snow.

Eastern Oregon Hydrology

Eastern Oregon has more complex hydrologic patterns than western Oregon. Precipitation is less than 10 in. per year in the semiarid regions, such as parts of the north-central area, the closed basin in south-central Oregon, and southeastern Oregon. The northeastern part of the state receives as much as 80 in. of precipitation per year, much of it occuring as snow fall. On the large streams in eastern Oregon, flooding can result from winter rains and (or) seasonal snowmelt; in the smaller drainage basins, flooding can result from winter rains, seasonal snowmelt, and convection storms.

In eastern Oregon, major hydrologic areas include: (1) the three semiarid regions mentioned above; (2) the northeastern part of the state, which includes the drainage basins of the Wallowa and Blue Mountains; and (3) the Klamath River basin which drains the east side of the Cascades and also the semiarid areas to the east.

HYDROLOGIC CONDITIONS FOR EASTERN OREGON DURING THE 1981 WATER YEAR

Streamflow was generally slightly below the long term average throughout eastern Oregon during the 1981 water year. Precipitation was generally above average for eastern Oregon. Snowpack was much below average throughout most eastern Oregon on April 1. The exception was the Steen Mountains which was near average with one notable exception. No major flooding or drought occured in eastern Oregon during the 1981 water year.

The most extreme hydrologic event of the 1981 water year was a catastrophic mudflow off the Pollallie Creek drainage on the northeast flanks of Mt. Hood on Christmas day. The mudflow resulted in the death of one person, the destruction of a water supply line, and over 12 million dollars damage to Highway 35.

Closed Basins

With the excepthion of the Donner Und Blitzen River flows in the closed basins were below average. The average annual flow of Drews Creek in the Goose Lake basin was about 75 percent of the long-term average.

Average flow of the Donner und Blitzen River of the Harney Lake basin was essentially the same as the long-term average. The peak for the year occurred on May 14, and resulted from snowmelt in the Steens Mountains. The peak of 1670 ft^3/s was a relatively small peak with an exceedance probability of about 40 percent. This means there is about a 40 percent chance that a peak of at least this magnitude will occur in any one year.

Concentrations of chemical constituents in the Donner und Blitzen River were not significantly different from previous years.

Klamath River Basin

Flows in the Klamath River basin were generally below average in the 1981 water year. As an example, mean flow of Williamson River below Sprague River near Chiloquin (station 11502500) was 69 percent of the long-term average. Peak discharge of the year occurred on Feb. 19 as a result of a general rain storm at an exceedance probability of over 80 percent. This represents a very low magnitude maximum discharge.

Snowpack on April 1 in the Upper Klamath River basin was only 19 percent of average.

Southeast Region

In the extreme southeastern part of the state, which is drained by the Owyhee and Malheur Rivers, flow of Owyhee River near Rome (station 13181000) was well below average. At that site, the 1981 mean flow was 37 percent of the 32-year average. The river has some regulation from upstream reservoirs. Head-waters of the Owyhee River are in northern Nevada, southwestern Idaho, and southeastern Oregon. The Malheur River, which has its headwaters in the Blue Mountains of northeastern Oregon and is highly regulated, had slightly below-average flow.

Snowpack on April 1 was much below average throughout the Owyhee River basin and in the Malheur River basin.

Maximum flow for the year of Owyhee River near Rome occurred during the middle of April as the result of snowmelt.

The Owyhee River at Owyhee station (13184000) is downstream from a regulating reservoir that controls the flow and water quality at the gaging station. Generally, high flows during the irrigation season are caused by water released from the reservoir and result in lower concentrations of chemical constituents. During the nonirrigation season, most flow is from ground-water seepage and has higher concentrations of chemical constituents. During the 1981 water year dissolved-solids concentrations ranged from 418 to 830 mg/L. Concentrations of chemical constituents were not significantly different from previous years.

Northeast Region

Flows in the northeastern part of the state were slightly below average in the 1981 water year. Typical of the area was Grande Ronde River at Troy (station 13333000) which had an annual mean discharge which was 92 percent of the 37-year average. Mean flow of Minam River at Minam (station 13331500) was 37 percent of the 17-year average.

Snowpack on April 1 was below average in the Powder and Burnt River drainage basins and in the Wallowa and Blue Mountains, headwaters of the Grande Ronde River.

Peak flow of the Grande Ronde River at Troy and occurred on Feb. 19 and had an exceedance probability of about 20 percent, which indicates a fairly low peak flow.

Concentrations of chemical constituents in the Minam River were not significantly different from previous years.

North-Central Region

Flows in the north-central part of the state were slightly below average in the 1981 water year. The John Day River at McDonald Ferry (station 14048000) was about average and had an annual mean discharge which was 98 percent of the 77-year average. Mean discharge of Deschutes River at Moody, near Biggs (station 14103000) was 92 percent of the 78-year average. Flow of the Deschutes River is regulated by several reservoirs.

On April 1, snowpack throughout the mountains of the north-central area was below average. Peak discharge of John Day River at McDonald Ferry was 13,000 ft^3/s on Feb. 18 and resulted primarily from a statewide rainstorm. That peak discharge has an exceedance probability of about 50 percent. This is a very small flow event. A flood of this size is exceeded about every two years.

Concentrations of chemical constituents in John Day River at McDonald Ferry and Deschutes River at Moody were not significantly different from previous years.

GROUND-WATER LEVELS IN EASTERN OREGON, 1981 WATER YEAR

In eastern Oregon, ground-water levels generally were slightly below or near average throughout the year. In the Columbia Plateau ground-water reservoir in north-central Oregon, ground-water levels continued to decline. The decline rate varies in the region, accelerating in some areas and remaining steady in others. Probable cause of this trend is the withdrawal of large quantities of ground water from the basalt aquifer for irrigation purposes.

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 of Units (SI) on the inside of the back cover.

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

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

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

Total coliform bacteria are a particular group of bacteria that may be 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 which 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 warmblooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory, they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°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 warmblooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 ml of sample.

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

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

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

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

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

Cfs-day (ft^3/s-day) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, or about 646,000 gallons, or 2,445 cubic meters. It represents a runoff of approximately 0.0372 inch from 1 square mile or 0.3468 millimeter from 1 square kilometer.

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

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

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.

Continuing water-quality record station is a specified site which meets one or all conditions listed.

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

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

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

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

Instantaneous discharge is the discharge at a given time.

Mean discharge is the arithmetic average of discharge during a specific period.

Dissolved refers to that material in a representative water sample which passes through a 0.45 um 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. It is recognized that certain kinds of samples cannot be filtered; to provide for this, procedures that are considered equivalent to filtering through a 0.45 um membrane filter will be identified and announced at a later date.

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 a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeable 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 gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is obtained.

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

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

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

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

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

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

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

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

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

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually millimeters (ml) or liters (l). Number of planktonic organisms can be expressed in these terms.

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

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

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

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

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

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

Percent of total 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, number, weight, or volume.

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

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

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

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

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

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

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

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

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

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

Runoff in inches (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.

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

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

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

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

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 um 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 that the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 um 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 hierarchial 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	Emphemeroptera
Family	Ephemeridae
Genus	Hexagenia
Species	Hexagenia limbata

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

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

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

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

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

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

Turbidity of a sample is the reduction of transparency due to the presence of particulate matter. In this report it is expressed in Nephelometric turbidity units (NTU), obtained from the Nephelometric method for turbidity determination which measures the intensity of light scattered by suspended particles at 90 degrees from the path of an incident light source.

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, 1981 is called "1981 water year.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the 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 year after thorough mixing in the reservoir.

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

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

SPECIAL NETWORKS AND PROGRAMS

Some of the stations for which data are published in this report are included in special networks and programs. These stations are identified by their title, set in parentheses, under the station name.

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

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

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

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

Precipitation program was initiated by the U.S. Geological Survey after the eruption of Mount St. Helens to collect data on the quantity and quality of precipitation for specific events. Primary objectives of the program are to determine (1) the general quality of precipitation and (2) the effect of ash from Mount St. Helens on the quality of precipitation.

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

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

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

A picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.2 dpm (disintegrations per minute).

DOWNSTREAM ORDER AND STATION NUMBER

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

As an added means of indentification, each water-quality station, gaging station, and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record and continous-record stations; therefore, the station number for a partial-record station indicated downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left in the numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station, such as 14105700 which appears just to the left of the station name, includes the 2-digit part number "14" plus the 6-digit downstream order number "105700." In this report, the records are listed in downstream order by parts. The part number refers to an area whose boundaries coincide with certain natural drainage lines. All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and Computation of Data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals; and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from a water-stage recorder which gives a continuous graph of the fluctuations (for digital recorders, a tape punched at 15-, 30-, or 60-minute intervals) or from direct readings on a nonrecording gage. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in standard textbooks on the measurement of stream discharge. Surface areas of lakes or reservoirs are determined from instrument surveys using standard methods.

For a stream-gaging station, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), velocity-area studies, and logarithmic plotting. The application of the daily mean gage heights to the rating table gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. 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 individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relations is affected by backwater from reservoirs, tributary streams, or other causes. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information required for determining 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 determining discharge.

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

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

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

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

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

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

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published, along with the current records, in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge are affected by the revision, that fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised: "(m)" that only the instantaneous minimum was revised; and "(P)" that only the peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given.

The type of gage currently in use; the datum of the present gage referred to National Geodetic Vertical Datum; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 11.

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

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "EXTREMES" are given: First, the extremes for the period of record; second, information available outside the period of record; and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a non-recording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR: if they are all independent peaks (including the maximum for the year) above the selected base, with the time of occurrence and corresponding gage heights, are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The line headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the

month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

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

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

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

Accuracy of Data

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

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

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

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumptive use, regulation, evaporation, or other factors. For such stations, discharge in cubic feet per second per square mile and runoff in inches are not published unless satisfacory adjustments can be made for such effects. 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 unadjusted losses (consumptive use, evaporation, seepage, etc.) are large in comparison with the observed discharge.

Other Data Available

Monthly records for several ungaged sites are given in a separate section following the gaged sites. The accuracy of records for ungaged sites is generally lower than that for gaged sites, depending on the precision of the computation method and the accuracy of data used in the computations.

For most gaging stations, unpublished, detailed information, on file in the district office, includes discharge measurements, gage-height records, and rating tables. Many gaging-station records in Oregon through 1967 have been analyzed to determine several statistical summaries: (1) the number of days in each year that the daily discharge was between selected limits (duration tables), (2) the lowest mean discharge for selected numbers of consecutive days in each year, and (3) the highest mean discharge for selected number of consecutive days in each year.

Records of Discharge Collected by Agencies Other than the Geological Survey

Other Federal and State agencies have collected discharge data at other sites in Oregon during the current water year. Although these records have not been published by the U.S. Geological Survey, the National Water Data Exchange, NAWDEX, Water Reserouces Division, U.S. Geological Survey, National Center, Reston, VA., 22092, maintains an index of these sites and will furnish information about them.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and Computation of Data

Records of surface water quality are listed in downstream order by station number. The data generally are collected at or near gaging stations, and are reported immediately following other records for those stations. Water-quality data for most ungaged sites are listed with the records for other surface-water stations, in regular downstream order. The exceptions are the less detailed data for several ungaged sites, which are grouped separately in the section titled "Analyses of samples collected at water-quality partial-record stations."

The descriptive headings for detailed records of surface-water quality give periods of record for the various categories of data, extremes for certain pertinent data, and general remarks. For less detailed records, only the overall period of record is listed.

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

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey publications on Techniques of Water-Resources Investigations, which are listed on page 33.

One stream-water 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 for the accurate determination of mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling

as much as possible, consistent with available sampling techniques and methods of analysis. Where an apparent inconsistency exists between a reported pH value and 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 published records consist of daily maximum, minimum, and mean values. More detailed records may be obtained from the district office.

Since October 1967, the U.S. Geological Survey has used the metric system for reporting data on chemical constituents and concentrations of suspended sediment. Chemical constituents are now reported in milligrams per liter (mg/l) except for certain minor elements that are reported in micrograms per liter (ug/l). Suspended sediment is reported in milligrams per liter and water temperatures in degrees Celsius (°C). In water with a density of 1,000 g/ml, values in parts per million should be multiplied by the density to convert to milligrams per liter. To convert temperature in degrees Celsius to degrees Fahrenheit, see table 1 below.

In October 1968, the Geological Survey began reporting many of the chemical constituents as well as the minor elements in micrograms per liter instead of milligrams per liter. (See "Definitions of terms", page 11.)

Table 1.--Degrees Celsius (°C) to degrees Fahrenheit (°F)*
(Temperature reported to nearest 0.5°C)

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

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

Solutes

The methods of collecting and analyzing water samples to determine the kinds and concentrations of solutes are described by Brown, Skougstad, and Fishman (1970). If the mixture of solutes throughout the stream cross section is homogeneous, one sample can adequately define the water quality at a given time. 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 sites must be sampled at several vertical intervals across the channel to determine the solute load accurately.

At chemical-quality stations where monitors are installed, the records consists of daily maximum, minimum, and mean values for each constituent measured. More detailed records (hourly values) may be obtained from the district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. The water temperatures for daily stations are taken when a sample is collected, at about the same time each day. Large streams have small diurnal temperature changes; shallow streams may have a daily range of several degrees and may closely follow the changes in air temperature. Some streams may be affected by waste-heat discharges. At stations where continuously recording thermographs are used maximum and minimum temperatures for each day are published.

Sediment

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

During periods of rapidly changing flow or concentration, samples may have been collected 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 discharges observed for other periods of similar discharge. A blank in the daily mean concentration column of the suspended-sediment discharge table indicates the value in the sediment discharge column was estimated.

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

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

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of Data

The observation-well program in Oregon, begun in 1928, was continued through 1979 in cooperation with the Oregon Water Resources Department. During the period 1962-65, the number of wells in the observation-well network was increased from 102 to 840. Observation wells in the program are part of a basic national network for providing a historical record of water-level changes in selected aquifers in the nation. Most of the wells are measured periodically by personnel of the Oregon Water Resources Department. Measurements are made in most of the wells three or four times a year to obtain records of the effects of pumping and seasonal changes in ground-water storage. The measurements are generally made in winter and spring before pumping begins, during the pumping season, and at the end of the pumping season. Water-level measurements in 81 representative wells in the Oregon observation-well network are included in this report; the locations of these wells are shown in figure 5.

Each well is identified by means of a 15-digit number that is based on the grid system of latitude and longitude. The first six digits represent degrees, minutes, and seconds of north latitude; the next seven digits are degrees, minutes, and seconds, of west longitude; and the last two numbers are sequential numbers assigned in the order the wells are inventoried in a 1-second quadrangle. Each well is also identified by a local well number that provides continuity with older reports and local needs.

Well Descriptions

For each well, the well description includes, if available, the following information: Latitude-longitude number, local well number, owner, method of construction, use of well, aquifer name or lithology, diameter of casing, depth of well, depth interval perforated or screened, altitude of land surface datum (lsd) National Geodetic Vertical Datum of 1929 (NGVD), and a description of the measuring point.

The depth of the well at the time it was inventoried is given in the well description, and any subsequent changes also are described. Well diameter reported is the inside of the innermost well casing at land surface.

Water Levels

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

Water-level measurements in this report are given in feet below land-surface datum unless otherwise indicated. Those water levels that are above land-surface datum are preceded by a plus (+) sign. Land-surface datum is a datum plane that is approximately at land surface at each well. The height of the measuring point (MP) above or below land-surface datum is given in each well description.

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. Most measurements are reported to a hundredth of a foot; others are reported only to a tenth of a foot or a larger unit. Water levels determined by air line are less accurate than those measured by other methods; therefore, these water levels are reported only to the nearest half a foot.

The highest and lowest water levels measured at each well for the period of record are reported. These are intended to represent static water levels, but the lowest levels reported for some wells may reflect recent pumping.

Hydrographs

Hydrographs show fluctuations of water levels during 1956-79 in 15 selected observations wells. Generally, water levels are highest during the wet winter and spring months and lowest during the dry summer and autumn months. Water levels are shown on the hydrographs in feet below the land surface at the well.

Well-Numbering System

Local designations of wells discussed in this report are based on the official system for the rectangular subdivision of public lands, referenced to the Willamette base line and meridian. The number indicates the location of the well, by township, range, section, and its position within the section. A graphic illustration of this method of well numbering is shown below (fig 1). The numbers indicate the township, the range, and the section, respectively, in which the well is located. The letters following the section number locate the well within the section. The first letter denotes the quarter section (160 acres); the second, the quarter-quarter section (40 acres); and the third, the quarter-quarter-quarter section (10 acres). Where two or more wells are in the same 10-acre subdivision, serial numbers are added after the third letter. The section number and three-letter position indicator are shown on the location map adjacent to the well symbol. Within a county, the wells are arranged in sequential order based on increasing numbers for township and range and are shown on the map (fig. 5) by section number. For example, well 27S/18E-21aaa is in the NE¼NE¼NE¼ sec.21, T.27 S., R.18 E., in Lake County, and will be labeled as 21AAA.

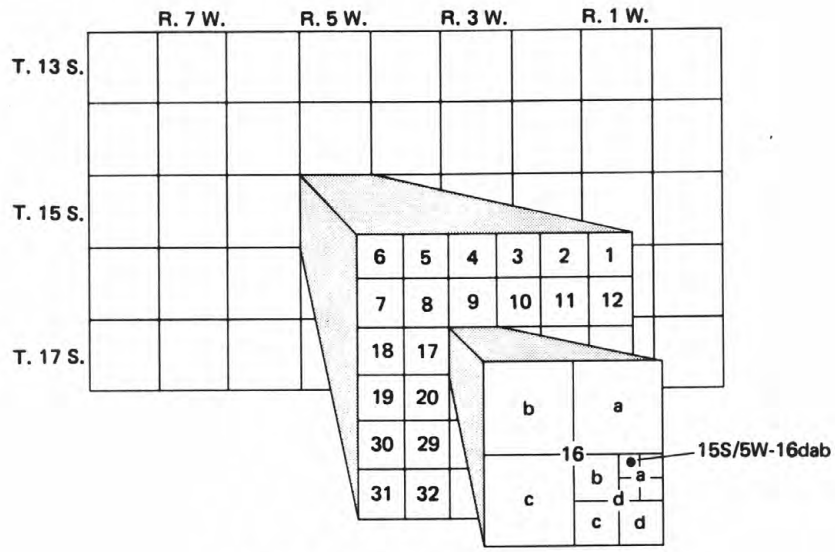


Figure 1. – Well-numbering system

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-five manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The manuals listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office).

Prices are subject to change. Customers should verify prices with the USGS Branch of Distribution, phone (202) 751-6777 before placing orders. Prices include cost of domestic surface transportation. For transmittal outside the U.S.A. (except to Canada and Mexico) a surcharge of 25 percent of the net bill should be included to cover surface transportation.

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

1-D1. WATER TEMPERATURE-INFLUENTIAL FACTORS, FIELD MEASUREMENT, AND DATA PRESENTATION, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS--TWRI, Book 1, Chapter D1. 1975. 65 pages.

1-D2. GUIDELINES FOR COLLECTION AND FIELD ANALYSIS OF GROUND-WATER SAMPLES FOR SELECTED UNSTABLE CONSTITUENTS, by W.W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

2-D1. APPLICATION OF SURFACE GEOPHYSICS TO GROUND-WATER INVESTIGATIONS, by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.

2-E1. APPLICATION OF BOREHOLE GEOPHYSICS TO WATER-RESOURCES INVESTIGATIONS, by W.S. Keys and L.M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.

3-A1. GENERAL FIELD AND OFFICE PROCEDURES FOR INDIRECT DISCHARGE MEASUREMENTS, by M.A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. MEASUREMENT OF PEAK DISCHARGE BY THE SLOPE-AREA METHOD, by Tate Dalrymple and M.A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. MEASUREMENT OF PEAK DISCHARGE AT CULVERTS BY INDIRECT METHODS, by G.L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. MEASUREMENT OF PEAK DISCHARGE AT WIDTH CONTRACTIONS BY INDIRECT METHODS, by H.F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. MEASUREMENT OF PEAK DISCHARGE AT DAMS BY INDIRECT METHODS, by Harry Hulsing: USGS-TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. GENERAL PROCEDURE FOR GAGING STREAMS, by R.W. Carter and Jacob Davidian: USGS.-TWRI Book 3, Chapter A6, 1968. 13 pages.

3-A7. STAGE MEASUREMENTS AT GAGING STATIONS, by T.J. Buchanan and W.P. Somers: USGS-TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. DISCHARGE MEASUREMENTS AT GAGING STATIONS, by T.J. Buchanan and W.P. Somers: USGS-TWRI Book 3, Chapter A8. 1969. 65 pages.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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-A12. FLUOROMETRIC PROCEDURES FOR DYE TRACING, by J.F. Wilson Jr.: USGS--TWRI Book 3, Chapter A12. 1968. 31 pages. Not currently available.

3-B1. AQUIFER-TEST DESIGN, OBSERVATION, AND DATA ANALYSIS, by R.W. Stallman: USGS-TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. INTRODUCTION TO GROUND-WATER HYDRAULICS, A PROGRAMED TEXT FOR SELF-INSTRUCTION, By G.D. Bennett: USGS-TWRI Book 3, Chapter B2. 1976. 172 pages.

3-C1. FLUVIAL SEDIMENT CONCEPTS, by H.P. Guy: USGS-TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. FIELD METHODS FOR MEASUREMENT OF FLUVIAL SEDIMENT, by H.P. Guy and V.W. Norman: USGS-TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. COMPUTATION OF FLUVIAL-SEDIMENT DISCHARGE, by George Porterfield: USGS-TWRI Book 3, Chapter C3. 1972. 66 pages.

4-A1. SOME STATISTICAL TOOLS IN HYDROLOGY, by H.C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. FREQUENCY CURVES, by H.C. Riggs: USGS-TWRI Book 4, Chapter A2. 1968. 15 pages.

4-B1. LOW-FLOW INVESTIGATIONS, by H.C. Riggs: USGS-TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. STORAGE ANALYSES FOR WATER SUPPLY, by H.C. Riggs and C.H. Hardison: USGS-TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. REGIONAL ANALYSES OF STREAMFLOW CHARACTERISTICS, by H.C. Riggs: USGS-TWRI Book 4, Chapter B3. 1973. 15 pages.

4-D1. COMPUTATION OF RATE AND VOLUME OF STREAM DEPLETION BY WELLS, by C.T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.

5-A1. METHODS FOR COLLECTION AND ANALYSIS OF WATER SAMPLES FOR DISSOLVED MINERALS AND GASES, by Eugene Brown, M.W. Skougstad, and M.J. Fishman: USGS-TWRI Book 5, Chapter A1. 1970. 160 pages.

5-A2. DETERMINATION OF MINOR ELEMENTS IN WATER BY EMISSION SPECTROSCOPY, by P.R. Barnett and E.C. Mallory, Jr.: USGS-TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. METHODS FOR ANALYSIS OF ORGANIC SUBSTANCES IN WATER, by D.F. Goerlitz and Eugene Brown: USGS-TWRI Book 5, Chapter A3. 1972. 40 pages.

5-A4.* METHODS FOR COLLECTION AND ANALYSIS OF AQUATIC BIOLOGICAL AND MICROBIOLOGICAL SAMPLES, edited by P.E. Greeson, T.A. Ehlke, G.A. Irwin, B.W. Lium, and K.V. Slack: USGS-TWRI Book 5, Chapter A4. 1977. 332 pages.

5-A5.* METHODS FOR DETERMINATION OF RADIOACTIVE SUBSTANCES IN WATER AND FLUVIAL SEDIMENTS, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS-TWRI Book 5, Chapter A5. 1977. 95 pages.

5-C1. LABORATORY THEORY AND METHODS FOR SEDIMENT ANALYSIS, by H.P. Guy: USGS-TWRI Book 5, Chapter C1. 1969. 58 pages.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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. 1976. 90 pages.

8-A1. METHODS OF MEASURING WATER LEVELS IN DEEP WELLS, by M.S. Garber and F.C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.

8-B2. CALIBRATION AND MAINTENANCE OF VERTICAL-AXIS TYPE CURRENT METERS, by G.F. Smoot and C.E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

*These publications are available ONLY from Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. They are in looseleaf format and are subscription items. Additional supplements will be issued to subscribers at no extra cost. Checks should be made payable to Superintendent of Documents. Requester should emphasize to Superintendent of Documents that this is a subscription item.

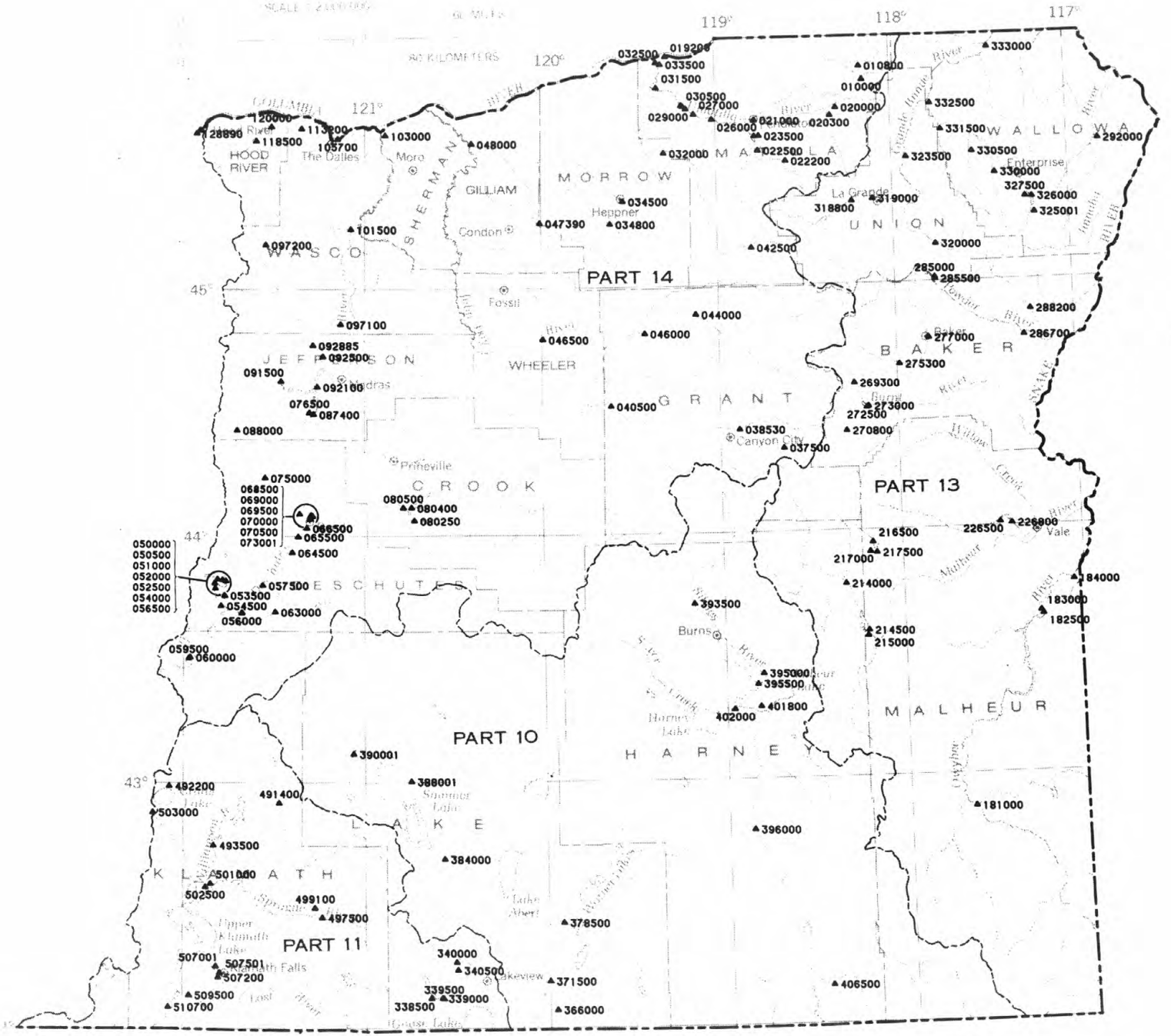


Figure 2. — Map of Eastern Oregon showing location of active gaging stations.

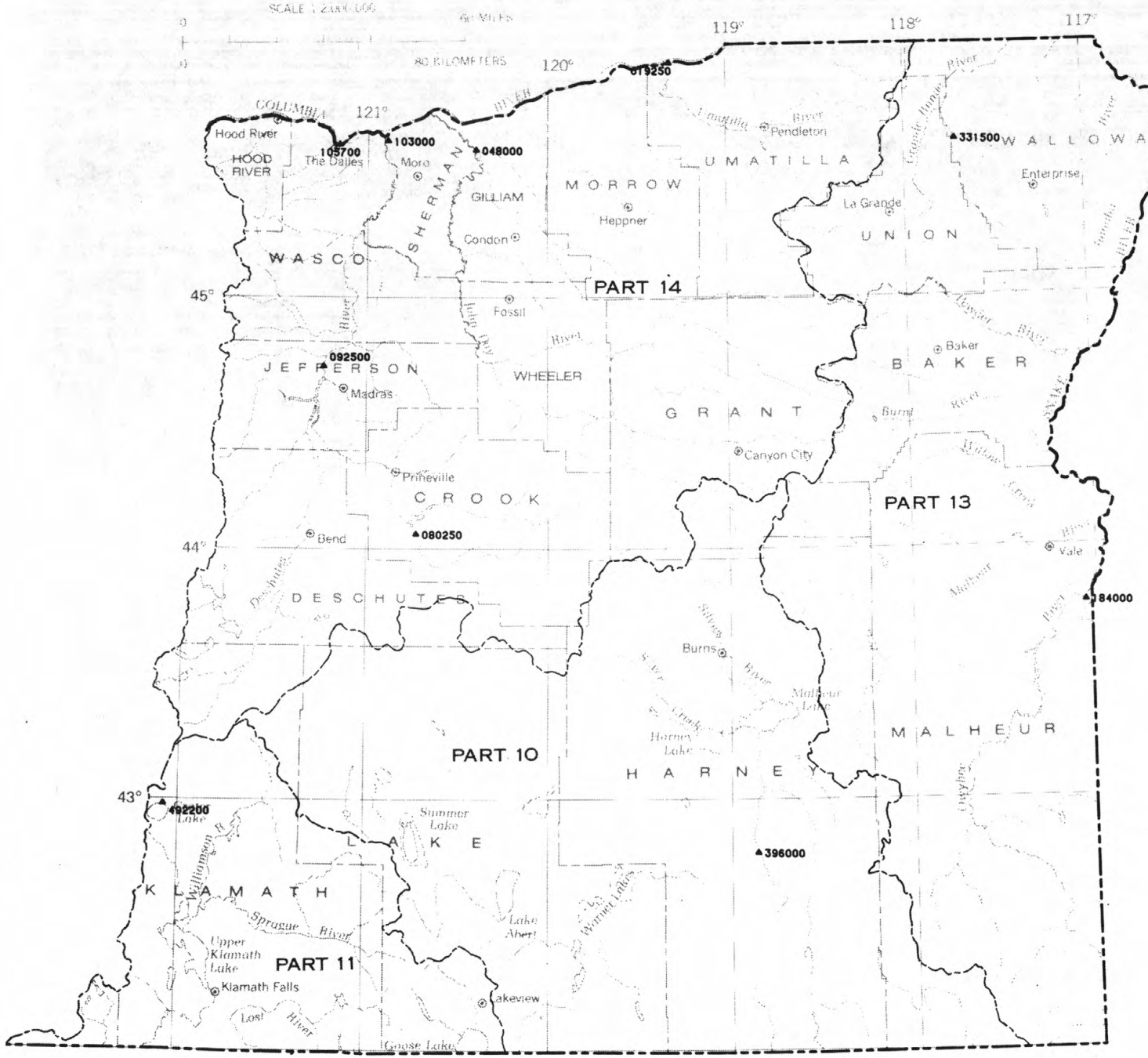


Figure 3. — Map of Eastern Oregon showing sites where water-quality data are obtained.

THE GREAT BASIN

WARNER LAKES BASIN

10366000 TWENTYMILE CREEK NEAR ADEL, OR

LOCATION.--Lat 42°04'20", long 119°57'42", in SW¼NW¼ sec.25, T.40 S., R.23 E., Lake County, Hydrologic Unit 17120007, on left bank 1.5 mi (2.4 km) downstream from Twelvemile Creek and 8 mi (13 km) southwest of Adel.

DRAINAGE AREA.--194 mi^2 (502 km^2), including 46 mi^2 (119 km^2) in Cowhead Lake area.

PERIOD OF RECORD.-- March 1910 to July 1916, December 1917 to September 1919, and March 1921 to June 1922 (published as "near Warner Lake"), September 1940 to November 1944, March 1945 to current year.

REVISED RECORDS.--WSP 1090: 1945. WSP 1514: 1951-53, 1954(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,560.83 ft (1,390.141 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 21, 1940, nonrecording gage or water-stage recorder at sites within 1 mi (2 km) downstream at various datums. Sept. 21, 1940, to Nov. 30, 1944, water-stage recorder at site 1.8 mi (2.9 km) upstream at different datums. Mar. 12, 1945, to June 28, 1952, water-stage recorder at site 70 ft (21 m) upstream at datum 0.88 ft (0.268 m) higher.

REMARKS.--Records good. Some regulation by pumpage from Cowhead Lake. Diversions in Oregon for irrigation above station; considerable diversions for irrigation in Cowhead Lake area in California.

AVERAGE DISCHARGE.--46 years (water years 1911-15, 1919, 1941-44, 1946-81), 51.1 ft^3/s (1.447 m^3/s), 37,020 acre-ft/yr (45.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,670 ft^3/s (104 m^3/s) Dec. 23, 1964, gage height, 16.1 ft (4.91 m), from rating curve extended above 920 ft^3/s (26.1 m^3/s) on basis of contracted-opening measurement of 3,260 ft^3/s (92.3 m^3/s); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 510 ft^3/s (14.4 m^3/s) and maximum discharge, 1,290 ft^3/s (36.5 m^3/s) Feb. 16, gage height, 7.12 ft (2.170 m); no flow Nov. 8, Dec. 13, Jan. 2, 15, Feb. 1-3, 7-9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	5.6	5.1	6.2	3.0	13	39	69	18	3.7	1.8	2.3
2	4.1	6.8	7.0	5.6	4.0	19	33	66	18	3.7	1.8	2.5
3	4.1	6.8	7.5	5.4	6.5	19	26	50	17	3.4	1.8	2.3
4	4.1	7.5	8.5	6.0	4.5	17	23	46	14	3.1	2.3	2.3
5	4.1	7.5	6.0	6.8	5.0	15	20	38	12	2.8	2.3	2.3
6	4.1	8.1	5.0	5.1	4.0	13	19	35	12	3.4	2.3	2.5
7	4.1	8.8	4.5	4.6	3.7	16	18	32	11	4.4	2.0	2.5
8	4.1	7.5	4.0	5.1	3.7	20	17	30	9.9	3.7	1.5	2.3
9	4.1	7.5	4.0	5.4	5.7	29	16	29	9.9	3.4	.98	2.0
10	4.1	7.0	4.0	5.6	4.3	24	15	30	9.9	2.8	.98	2.0
11	3.6	6.5	4.0	4.2	6.2	18	15	29	9.2	2.8	.98	2.0
12	4.1	6.2	4.0	5.6	6.8	15	15	27	13	2.5	1.1	1.8
13	6.2	6.0	4.0	5.1	8.1	13	15	25	15	2.5	1.1	1.8
14	8.1	5.8	4.0	7.5	50	12	15	33	11	2.5	.98	2.0
15	6.8	5.6	4.0	5.8	186	11	15	30	9.2	2.3	.98	2.0
16	6.8	5.6	4.5	6.2	410	12	15	29	7.9	2.3	1.1	1.8
17	6.2	5.6	5.0	6.2	358	9.5	15	25	7.9	2.0	1.3	1.8
18	5.6	6.3	4.5	6.2	80	10	17	33	7.3	1.8	1.5	1.8
19	5.1	7.4	4.0	6.2	95	12	20	31	6.7	2.0	1.8	1.5
20	5.1	7.0	4.0	5.6	52	13	22	28	6.2	2.0	1.8	1.8
21	5.1	7.0	4.0	6.2	42	13	24	28	5.7	2.0	1.8	2.3
22	5.1	7.5	4.5	6.8	58	11	27	24	5.7	1.8	1.8	2.8
23	5.1	8.5	5.0	6.0	72	11	33	23	5.2	1.8	1.5	3.1
24	5.1	7.5	4.5	5.5	43	10	70	25	5.2	1.8	1.5	3.4
25	5.6	6.6	6.5	5.0	22	60	56	29	4.8	1.8	1.5	4.1
26	6.2	6.0	16	4.8	17	202	44	28	4.4	1.8	1.3	3.7
27	6.2	6.5	12	5.0	15	233	36	26	4.1	1.8	1.5	3.7
28	5.6	8.1	9.5	5.6	14	177	41	23	4.1	1.5	2.0	4.4
29	6.2	6.2	8.1	6.2	---	123	47	21	4.1	1.3	1.8	4.1
30	5.6	6.8	7.5	5.0	---	102	56	20	3.7	1.3	2.0	3.7
31	6.2	---	6.8	3.8	---	47	---	20	---	1.8	2.3	---
TOTAL	161.1	205.8	182.0	174.3	1579.5	1299.5	824	982	272.1	75.8	49.40	76.6
MEAN	5.20	6.86	5.87	5.62	56.4	41.9	27.5	31.7	9.07	2.45	1.59	2.55
MAX	8.1	8.8	16	7.5	410	233	70	69	18	4.4	2.3	4.4
MIN	3.6	5.6	4.0	3.8	3.0	9.5	15	20	3.7	1.3	.98	1.5
AC-FT	320	408	361	346	3130	2580	1630	1950	540	150	98	152

CAL YR 1980	TOTAL	27258.19	MEAN 74.5	MAX 2450	MIN .63	AC-FT	54070	
WTR YR 1981	TOTAL	5882.10	MEAN 16.1	MAX 410	MIN .98	AC-FT	11670	

WARNER LAKES BASIN

10371500 DEEP CREEK ABOVE ADEL, OR

LOCATION.-- Lat 42°11'21", long 120°00'02", in SW¼NW¼ sec.15, T.39 S., R.23 E., Lake County, Hydrologic Unit 17120007, on left bank 700 ft (213 m) downstream from Drake Creek and 5 mi (8 km) west of Adel.

DRAINAGE AREA.--249 mi^2 (645 km^2).

PERIOD OF RECORD.--September 1922 to September 1923, October 1929 to current year. Monthly discharge only October 1929 to September 1932, published in WSP 1314.

GAGE.--Water-stage recorder. Datum of gage is 4,980.34 ft (1,518.008 m) National Geodetic Vertical Datum of 1929 (State Highway Department bench mark). Sept. 8 to Dec. 20, 1922, nonrecording gage. Dec. 21, 1922, to Sept. 30, 1923, and Oct. 11, 1929, to Dec. 23, 1964, water-stage recorder at site 700 ft (213 m) downstream at different datums. Jan. 20 to Sept. 30, 1965, nonrecording gage at site 2,000 ft (610 m) downstream at different datum.

REMARKS.--Records good. No regulation. Diversions for irrigation above station.

AVERAGE DISCHARGE.--53 years, 127 ft^3/s (3.597 m^3/s), 92,010 acre-ft/yr (113 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,420 ft^3/s (267 m^3/s) Dec. 23, 1964, gage height, 10.64 ft (3.243 m), from floodmark, from rating curve extended above 1,100 ft^3/s (31.2 m^3/s) on basis of slope-area measurements at 7.3 ft (2.2 m) and of peak flow; minimum, 1.7 ft^3/s (0.048 m^3/s) July 20, 27-29, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 600 ft^3/s (17.0 m^3/s) and maximum discharge, 714 ft^3/s (20.2 m^3/s) Feb. 16, gage height, 3.15 ft (0.960 m); minimum, 3.8 ft^3/s (0.11 m^3/s) Aug. 8, 11, 14, 16, 20, 25.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	21	25	48	18	70	181	308	115	9.9	4.9	4.8
2	17	20	44	45	25	84	184	296	115	9.4	4.8	4.6
3	17	21	62	48	45	71	160	247	110	8.8	4.9	4.8
4	18	22	71	45	37	60	118	221	90	8.3	4.9	4.8
5	17	21	40	33	30	55	123	205	80	8.3	5.0	4.8
6	17	20	33	31	25	62	149	240	78	8.3	4.9	4.9
7	17	22	30	36	23	62	123	290	73	11	4.8	5.1
8	15	32	27	40	23	62	118	220	74	9.9	4.7	4.9
9	16	27	25	38	24	62	111	190	80	8.8	4.4	4.8
10	17	25	26	31	26	62	107	170	65	7.8	4.4	4.8
11	16	23	30	33	29	60	107	150	52	7.4	4.6	4.8
12	17	19	32	37	31	60	100	140	80	6.6	4.6	4.7
13	26	18	32	33	35	64	100	130	105	6.2	4.5	4.7
14	36	17	32	35	149	65	107	190	92	6.2	4.3	4.8
15	32	17	32	35	200	67	125	220	71	6.2	4.3	4.8
16	30	17	41	30	316	78	144	230	51	5.9	4.1	4.9
17	27	17	33	32	408	69	163	220	41	5.9	4.3	4.7
18	26	18	28	33	212	71	173	210	37	5.5	4.5	4.7
19	27	19	26	33	275	78	209	230	33	5.5	4.5	4.8
20	28	18	26	31	179	80	206	260	30	5.5	4.4	4.8
21	26	19	31	42	155	67	230	380	26	5.5	4.5	5.0
22	24	22	80	51	155	69	233	200	23	5.2	4.6	5.1
23	22	32	52	46	155	64	244	160	20	5.2	4.6	5.4
24	22	36	45	35	133	58	372	160	19	4.9	4.4	6.1
25	25	24	206	27	96	160	340	170	17	4.9	4.2	6.2
26	31	23	179	28	70	275	312	180	15	5.2	4.3	6.8
27	29	22	125	33	60	247	261	150	13	5.2	4.4	9.2
28	26	27	98	35	56	312	230	120	12	4.9	4.4	8.6
29	25	27	74	23	---	356	233	100	12	4.9	4.4	7.6
30	24	22	64	20	---	224	261	110	11	4.9	4.4	7.0
31	23	---	55	18	---	168	---	105	---	5.2	4.7	---
TOTAL	710	668	1704	1085	2990	3342	5524	6202	1640	207.4	140.7	163.0
MEAN	22.9	22.3	55.0	35.0	107	108	184	200	54.7	6.69	4.54	5.43
MAX	36	36	206	51	408	356	372	380	115	11	5.0	9.2
MIN	15	17	25	18	18	55	100	100	11	4.9	4.1	4.6
AC-FT	1410	1320	3380	2150	5930	6630	10960	12300	3250	411	279	323

CAL YR 1980 TOTAL 60623.2 MEAN 166 MAX 2290 MIN 9.9 AC-FT 120200
WTR YR 1981 TOTAL 24376.1 MEAN 66.8 MAX 408 MIN 4.1 AC-FT 48350

10378500 HONEY CREEK NEAR PLUSH, OR

LOCATION.--Lat 42°25'30", long 119°55'20", in SW¼SW¼ sec.20, T.36 S., R.24 E., Lake County, Hydrologic Unit 17120007, on right bank 700 ft (213 m) upstream from mouth of canyon, 1 mi (1.6 km) northwest of Plush, and 4 mi (6.4 km) downstream from Twelvemile Creek.

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

PERIOD OF RECORD.--May 1909 to September 1914 (prior to January 1910, gage heights only), March to May 1915, March to September 1921, March to June 1922, May 1930 to current year. Monthly discharge only May 1930 to September 1949, published in WSP 1314.

REVISED RECORDS.--WSP 1564: 1911-12. WSP 1714: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,552.60 ft (1,387.632 m) National Geodetic Vertical Datum of 1929. Dec. 24, 1964, to Sept. 30, 1965, nonrecording gage at site 100 ft (30 m) downstream at different datums. See WSP 1927 for history of changes prior to Dec. 24, 1964.

REMARKS.--Records good. Slight regulation by five small reserviors, combined capacity, 870 acre-ft (1.07 hm^3). Diversions for irrigation above station.

AVERAGE DISCHARGE.--55 years (water years 1911-14, 1931-81), 29.3 ft^3/s (0.830 m^3/s), 21,230 acre-ft/yr (26.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maxiumum discharge, 11,000 ft^3/s (312 m^3/s) Dec. 23, 1964, gage height, 13.4 ft (4.08 m), from floodmark, from rating curve extended above 250 ft^3/s (7.08 m^3/s) on basis of slope-area measurements at gage height 10.46 ft (3.188 m) and of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 200 ft^3/s (5.66 m^3/s) and maximum discharge, 218 ft^3/s (6.17 m^3/s) Feb. 16, gage height, 3.77 ft (1.149 m); minimum, 0.27 ft^3/s (0.008 m^3/s) Sept. 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.93	4.0	4.0	11	4.5	19	55	46	25	4.6	.57	.48
2	.89	3.8	9.4	11	4.5	17	63	45	24	8.7	.57	.40
3	.84	3.8	17	11	5.2	16	81	39	24	9.8	.57	.40
4	.79	3.8	14	11	4.5	18	34	38	18	8.7	.59	.37
5	.74	3.8	8.3	7.7	4.5	17	33	35	16	4.0	.59	.37
6	.62	3.6	6.5	6.1	4.5	15	51	40	16	3.6	.62	.35
7	.59	4.0	5.0	6.8	4.5	17	44	52	15	5.8	.51	.35
8	.98	8.0	4.0	6.8	4.5	20	37	43	15	5.2	.48	.35
9	.84	6.4	2.8	8.7	4.5	20	34	38	19	3.4	.43	.35
10	.93	5.0	3.0	8.0	5.0	20	31	33	20	1.4	.43	.33
11	1.6	4.0	3.3	8.0	6.5	17	28	29	19	.84	.48	.33
12	2.8	3.0	3.3	7.7	8.0	14	25	27	24	.62	.62	.31
13	3.6	2.5	3.3	8.3	13	12	25	25	27	.59	.62	.31
14	4.4	2.5	3.3	7.7	88	12	29	34	25	.54	.62	.31
15	4.8	2.5	6.4	6.8	58	12	37	39	19	.48	.59	.29
16	4.8	3.0	8.7	8.3	73	11	44	45	13	.48	.51	.29
17	4.6	3.8	11	8.0	93	9.8	46	41	11	.43	.45	.27
18	3.8	4.2	9.5	8.3	45	10	49	39	10	.43	.43	.29
19	4.0	4.0	8.2	8.3	77	18	64	44	9.8	.43	.40	.31
20	3.2	4.2	8.2	8.0	57	18	70	49	8.7	.43	.40	.33
21	3.4	4.4	8.2	9.0	43	15	71	85	7.4	.43	.37	.31
22	3.4	4.6	8.2	12	45	15	64	45	7.4	.43	.37	.31
23	3.8	5.0	8.2	12	43	17	64	34	9.8	.43	.37	.33
24	4.0	5.8	8.2	11	38	17	77	33	11	.40	.35	.37
25	4.4	4.2	15	8.0	27	21	75	38	11	.54	.37	.35
26	5.8	5.2	19	7.7	23	45	73	40	6.8	.57	.35	.35
27	6.2	4.6	30	8.7	19	44	65	34	4.2	.57	.45	.35
28	5.2	5.5	23	11	18	54	56	26	3.6	.57	.54	.35
29	4.8	4.8	17	8.0	---	101	54	21	3.4	.57	.57	.35
30	4.6	4.2	14	6.0	---	70	50	23	3.4	.57	.57	.35
31	4.6	---	12	5.0	---	44	---	21	---	.57	.57	---
TOTAL	95.95	128.2	300.0	265.9	820.7	755.8	1529	1181	426.5	66.12	15.36	10.21
MEAN	3.10	4.27	9.68	8.58	29.3	24.4	51.0	38.1	14.2	2.13	.50	.34
MAX	6.2	8.0	30	12	93	101	81	85	27	9.8	.62	.48
MIN	.59	2.5	2.8	5.0	4.5	9.8	25	21	3.4	.40	.35	.27
AC-FT	190	254	595	527	1630	1500	3030	2340	846	131	30	20

CAL YR 1980 TOTAL 12846.25 MEAN 35.1 MAX 410 MIN .49 AC-FT 25480
WTR YR 1981 TOTAL 5594.74 MEAN 15.3 MAX 101 MIN .27 AC-FT 11100

10384000 CHEWAUCAN RIVER NEAR PAISLEY, OR

LOCATION.--Lat 42°41'05", long 120°34'08", in SW¼NW¼ sec.26, T.33 S., R.18 E., Lake County, Hydrologic Unit 17120006, on left bank 1.2 mi (1.9 km) downstream from Mill Creek and 1.4 mi (2.3 km) southwest of Paisley.

DRAINAGE AREA.--275 mi^2 (712 km^2).

PERIOD OF RECORD.--April 1912 to September 1921, May 1924 to current year. Published as "above Conn ditch, near Paisley" April to September 1912 and May 1924 to September 1955, as "above Mill Creek, near Paisley" October 1912 to December 1913, and as "at Chewaucan Land & Cattle Co.'s gage, near Paisley" January to September 1914.

REVISED RECORDS.--WSP 860: Drainage area. WSP 1927: 1957-59.

GAGE.--Water-stage recorder. Datum of gage is 4,430 ft (1,350 m) National Geodetic Vertical Datum of 1929 (river-profile survey). See WSP 1734 for history of changes prior to Oct. 6, 1956.

REMARKS.--Records excellent except those for December and January, which are fair. No regulation. Diversions for irrigation above station.

AVERAGE DISCHARGE.--66 years, 142 ft^3/s (4.021 m^3/s), 102,900 acre-ft/yr (127 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,490 ft^3/s (184 m^3/s) Dec. 22, 1964, gage height, 8.35 ft (2.545 m), from rating curve extended above 900 ft^3/s (25.5 m^3/s) on basis of slope-area measurement of peak flow; no flow for part of each day Dec. 7, 1927, Dec. 12, 1932, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 500 ft^3/s (14.2 m^3/s) and maximum discharge, 525 ft^3/s (14.9 m^3/s) Feb. 17, gage height, 2.83 ft (0.863 m); minimum, 12 ft^3/s (0.34 m^3/s) Dec. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	37	24	30	25	110	176	391	137	37	20	16
2	28	36	28	30	25	102	166	395	134	37	20	16
3	28	36	32	30	25	97	157	351	132	37	20	16
4	28	36	35	30	25	108	139	314	119	35	19	16
5	28	36	30	30	25	96	145	289	109	34	20	17
6	27	36	25	30	25	82	154	275	109	39	19	17
7	27	48	23	30	25	107	150	258	103	57	18	17
8	27	82	21	30	25	98	145	235	117	46	17	16
9	27	53	21	30	35	92	143	226	146	36	17	16
10	27	47	25	30	45	93	137	217	109	32	16	17
11	27	43	28	31	54	94	137	208	95	31	16	19
12	34	36	28	32	74	93	130	192	110	30	16	19
13	49	33	28	32	76	94	130	189	106	28	17	19
14	56	33	30	32	203	96	141	211	98	27	17	19
15	50	33	34	32	179	97	164	202	88	26	16	19
16	45	33	36	32	222	105	179	207	79	25	16	18
17	41	33	33	32	300	84	194	183	73	24	16	19
18	38	33	31	32	182	94	214	209	67	24	17	19
19	37	43	31	32	240	108	289	229	65	24	17	19
20	37	43	31	35	196	105	303	196	61	23	17	19
21	36	41	31	39	156	92	314	183	57	22	17	19
22	40	44	31	35	160	94	328	167	54	22	16	20
23	35	47	31	32	153	94	343	162	52	21	15	20
24	35	44	34	30	141	89	411	176	51	21	15	21
25	38	38	39	27	123	157	424	199	49	21	14	23
26	43	40	44	28	123	245	403	191	47	21	16	25
27	42	40	45	30	107	197	339	175	44	21	16	27
28	38	45	38	30	109	189	324	161	42	21	16	42
29	42	41	33	28	---	220	343	154	41	19	16	33
30	40	40	30	27	---	208	359	153	38	19	16	28
31	39	---	30	25	---	174	---	146	---	20	16	---
TOTAL	1117	1230	960	953	3078	3714	6981	6844	2532	880	524	611
MEAN	36.0	41.0	31.0	30.7	110	120	233	221	84.4	28.4	16.9	20.4
MAX	56	82	45	39	300	245	424	395	146	57	20	42
MIN	27	33	21	25	25	82	130	146	38	19	14	16
AC-FT	2220	2440	1900	1890	6110	7370	13850	13580	5020	1750	1040	1210

CAL YR 1980 TOTAL 56782 MEAN 155 MAX 872 MIN 18 AC-FT 112600
WTR YR 1981 TOTAL 29424 MEAN 80.6 MAX 424 MIN 14 AC-FT 58360

10388001 ANA RIVER NEAR SUMMER LAKE, OR

LOCATION.--Lat 43°00'00", long 120°45'00", in SE¼ sec.6, T.30 S., R.17 E., Lake County, Hydrologic Unit 17120005, on left bank 300 ft (91 m) downstream from diversion dam and 2.0 mi (3.2 km) northeast of town of Summer Lake.

DRAINAGE AREA.--Indeterminate, source of stream is Ana River Springs, three-quarters of a mile above station, which are flooded over by pondage behind diversion dam.

PERIOD OF RECORD.--October 1929 to September 1939 (river only); June to September 1928, April 1931 to July 1938, and April 1940 to September 1942 (irrigation season records for Summer Lake Canal only); June 1951 to current year. Prior to June 1951 monthly discharge only, published in WSP 1314.

GAGE.--Water-stage recorder. Altitude of gage is 4,160 ft (1,268 m) from plans of Ana River diversion dam. Oct. 1, 1929, to Sept. 30, 1939, at site 80 ft (24 m) downstream at different datum.

REMARKS.--Records excellent. All records presented herein include flow in Summer Lake Canal which diverts 300 ft (91 m) above station for irrigation of lands along west side of Summer Lake. Flow regulated by gates at diversion dam.

AVERAGE DISCHARGE.--53 years (water years 1931-32, 1936, 1952-81), 91.3 ft^3/s (2.586 m^3/s), 66,150 acre-ft/yr (81.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 188 ft^3/s (5.32 m^3/s) Dec. 22, 1964, gage height, 2.81 ft (0.856 m), no flow in canal; minimum, 1.0 ft^3/s (0.028 m^3/s) Jan. 21, 22, 1970; minimum daily, 3.0 ft^3/s (0.085 m^3/s) Oct. 31, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 96 ft^3/s (2.72 m^3/s) May 16; minimum, 42 ft^3/s (1.19 m^3/s) July 18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	88	88	88	89	89	88	84	86	90	85	86
2	89	88	90	88	89	89	88	84	86	89	85	85
3	89	88	90	88	89	89	88	84	86	89	85	85
4	89	88	89	88	89	88	88	84	86	88	85	85
5	90	88	89	88	89	88	88	84	86	89	85	84
6	90	89	89	88	89	89	88	84	87	89	85	83
7	90	89	88	88	89	89	88	84	88	89	86	82
8	88	89	88	88	89	89	88	84	88	89	86	81
9	88	89	88	88	89	89	88	84	87	89	86	79
10	88	88	88	88	89	88	88	84	87	89	84	81
11	89	88	88	87	89	89	88	84	87	89	84	83
12	90	88	88	88	89	88	88	66	88	88	84	85
13	90	88	88	89	89	87	88	55	89	88	84	84
14	90	88	88	88	89	88	88	60	87	89	84	84
15	90	88	88	88	89	88	67	79	85	86	84	83
16	90	88	88	87	89	88	55	86	85	79	84	83
17	90	88	88	87	89	88	59	92	85	72	86	83
18	90	87	88	87	89	88	61	88	84	56	88	82
19	90	87	88	87	89	89	62	83	85	57	87	82
20	90	88	88	87	89	89	64	81	84	72	86	82
21	90	88	88	87	89	89	66	83	84	89	85	82
22	90	88	88	88	88	89	68	83	84	87	84	82
23	90	88	89	88	88	88	70	85	83	80	85	82
24	90	87	89	88	88	88	75	87	83	73	85	82
25	89	87	89	88	89	88	77	87	82	75	86	85
26	89	87	88	89	89	88	79	86	82	79	85	86
27	89	87	88	89	89	88	82	86	83	82	84	85
28	89	87	88	89	89	88	84	86	84	84	83	84
29	88	87	88	89	---	88	84	86	84	84	85	83
30	88	88	88	89	---	88	84	86	84	84	85	85
31	88	---	88	89	---	88	---	86	---	84	85	---
TOTAL	2769	2636	2758	2728	2489	2739	2369	2555	2559	2567	2635	2498
MEAN	89.3	87.9	88.3	88.0	88.9	88.4	79.0	82.4	85.3	82.8	85.0	83.3
MAX	90	89	90	89	89	89	88	92	89	90	88	86
MIN	88	87	88	87	88	87	55	55	82	56	83	79
AC-FT	5490	5230	5450	5410	4940	5430	4700	5070	5080	5090	5230	4950

CAL YR 1980 TOTAL 31467 MEAN 86.0 MAX 115 MIN 49 AC-FT 62410
WTR YR 1981 TOTAL 31282 MEAN 85.7 MAX 92 MIN 55 AC-FT 62050

10390001 SILVER CREEK NEAR SILVER LAKE, OR

LOCATION.--Lat 43°06'50", long 121°03'59" in NE¼SW¼ sec.28, T.28 S., R.14 E., Lake County, Hydrologic Unit 17120005, on right bank 1.5 mi (2.4 km) downstream from diversion dam of Silver Lake Irrigation District, 1.5 mi (2.4 km) southwest of town of Silver Lake, and 3 mi (5 km) upstream from Bridge Creek.

DRAINAGE AREA.--180 mi^2 (466 km^2), approximately.

PERIOD OF RECORD.--January 1905 to March 1907, January 1909 to September 1927, February to December 1928, February 1929 to current year.

REVISED RECORDS.--WSP 1564: 1906, 1910, 1921(M). WSP 1734: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Sept. 15, 1932. Datum of gage is 4,361.22 ft (1,329.300 m) National Geodetic Vertical Datum of 1929. Prior to May 24, 1932, nonrecording gage or water-stage recorder at practically same location at datum 1.00 ft (0.305 m) higher, or nonrecording gage at diversion dam outlet 1.5 mi (2.4 km) upstream at different datum.

REMARKS.--Records good except those for December to February, which are fair. Flow regulated by reservoir, capacity, 800 acre-ft (986,000 m^3), above diversion dam 1.5 mi (2.4 km) above station and by Thompson Valley Reservoir, capacity, 17,400 acre-ft (21.5 hm^3), 11 mi (18 km) above station. Records given herein include flow in Silver Lake Irrigation District Canal which has diverted 1.5 mi (2.4 km) above station 1923-43, 1966-81.

AVERAGE DISCHARGE.--59 years (water years 1906, 1910-27, 1930-41, 1944-81), 29.7 ft^3/s (0.841 m^3/s), 21,520 acre-ft/yr (26.5 hm^3/yr), including diversion by Silver Lake Irrigation District Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,800 ft^3/s (51.0 m^3/s) Mar. 20, 1907, gage height, 10.08 ft (3.072 m), present datum, from rating curve extended above 700 ft^3/s (19.8 m^3/s); maximum gage height, 10.3 ft (3.139 m) Dec. 22, 1964; no flow at times in 1931-32, 1934, 1937.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 63 ft^3/s (1.78 m^3/s) May 25; minimum, 0.30 ft^3/s (0.008 m^3/s) Dec. 1 (result of freezeup), no flow in canal.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	11	2.8	7.8	1.7	9.5	8.8	15	42	22	19	1.6
2	21	10	3.1	7.8	1.7	8.8	8.8	16	40	19	17	1.6
3	22	10	3.3	7.8	1.7	8.5	8.4	16	41	21	15	1.6
4	23	9.5	3.6	7.8	1.7	8.5	7.7	16	53	21	10	1.6
5	24	9.5	3.0	7.8	3.2	8.1	7.4	15	59	21	8.6	1.4
6	24	9.5	3.0	7.8	3.2	7.8	6.7	14	59	22	6.7	1.4
7	25	10	3.0	7.8	3.2	6.0	6.7	14	59	22	5.8	1.4
8	25	9.5	3.0	7.4	3.2	6.1	6.7	13	60	22	5.2	1.4
9	22	9.5	3.3	7.4	3.2	5.6	6.3	13	60	24	4.9	1.4
10	19	9.5	3.1	7.4	3.2	5.7	6.3	11	57	28	4.6	1.1
11	19	9.2	2.8	7.4	2.8	5.8	6.3	9.0	55	28	4.5	1.1
12	19	9.2	2.5	7.4	2.8	5.8	6.0	26	54	27	4.1	1.1
13	19	8.8	2.3	6.2	2.8	5.8	5.5	43	53	26	3.2	1.0
14	19	8.8	2.5	2.4	3.3	5.8	5.2	51	53	29	3.1	1.0
15	19	8.8	2.8	1.9	4.2	6.1	5.5	52	52	31	2.9	1.0
16	17	8.8	2.8	1.9	4.8	6.3	6.1	52	51	28	2.9	1.9
17	15	6.4	2.8	1.9	6.7	6.0	7.1	52	51	27	2.7	1.6
18	15	3.3	2.8	1.9	11	5.7	8.2	55	52	27	2.6	1.6
19	8.4	3.3	2.8	2.1	15	6.7	9.7	56	52	28	2.6	1.4
20	4.5	3.3	2.8	2.1	16	6.7	12	55	52	29	2.3	1.4
21	4.4	3.3	2.8	2.1	15	6.7	13	56	50	29	2.3	1.4
22	4.1	3.3	2.8	2.1	14	6.0	14	58	51	28	2.3	1.4
23	4.0	3.3	3.0	2.1	13	6.0	15	59	53	29	2.3	1.0
24	3.6	3.2	3.0	2.1	13	5.4	15	59	54	29	2.1	.93
25	3.6	3.0	3.3	2.1	11	5.4	18	62	53	28	1.9	1.0
26	3.5	3.0	3.3	1.7	11	8.4	19	58	53	28	1.9	1.6
27	3.4	3.3	3.9	1.9	9.5	8.1	20	56	50	29	1.7	2.1
28	7.6	3.0	8.1	1.7	9.5	7.4	19	54	46	29	1.7	1.6
29	12	2.8	8.1	1.7	---	7.4	19	51	40	28	1.7	1.6
30	11	2.8	8.1	1.7	---	7.4	18	44	26	27	1.6	1.6
31	11	---	7.8	1.7	---	7.4	---	42	---	23	1.6	---
TOTAL	447.1	198.9	112.3	132.9	191.4	210.9	315.4	1193.0	1531	809	148.8	41.83
MEAN	14.4	6.63	3.62	4.29	6.84	6.80	10.5	38.5	51.0	26.1	4.80	1.39
MAX	25	11	8.1	7.8	16	9.5	20	62	60	31	19	2.1
MIN	3.4	2.8	2.3	1.7	1.7	5.4	5.2	9.0	26	19	1.6	.93
AC-FT	887	395	223	264	380	418	626	2370	3040	1600	295	83

CAL YR 1980 TOTAL 9521.10 MEAN 26.0 MAX 97 MIN 1.4 AC-FT 18890
WTR YR 1981 TOTAL 5332.53 MEAN 14.6 MAX 62 MIN .93 AC-FT 10580

10393500 SILVIES RIVER NEAR BURNS, OR

LOCATION.-- Lat 43°42'55", long 119°10'35", in NW¼NW¼ sec.31, T.21 S., R.30 E., Harney County, Hydrologic Unit 17120002, on left bank 5 mi (8 km) downstream from Emigrant Creek and 11 mi (18 km) northwest of Burns.

DRAINAGE AREA.--934 mi^2 (2,419 km^2).

PERIOD OF RECORD.--May 1903 to July 1906, December 1908 to December 1912, March 1913 to September 1917 (irrigation seasons only), March 1918 to October 1920, March 1921 to July 1922 (irrigation seasons only), October 1922 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,195 ft (1,279 m) National Geodetic Vertical Datum of 1929 (river-profile survey). See WSP 1734 for history of changes prior to Oct. 4, 1951.

REMARKS.--Records good. No regulation. Diversions for irrigation above station during periods of high flow only.

AVERAGE DISCHARGE.--68 years (water years 1904-5, 1910-12, 1918-21, 1923-81), 165 ft^3/s (4.673 m^3/s), 119,500 acre-ft/yr (147 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,960 ft^3/s (140 m^3/s) Apr. 6, 1952, gage height, 15.2 ft (4.63 m); no flow July 19 to Sept. 22, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 808 ft^3/s (22.9 m^3/s) Feb. 17, gage height, 7.15 ft (2.179 m); minimum, 8.2 ft^3/s (0.23 m^3/s) Sept. 12, 16-20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	33	28	90	43	183	387	393	246	56	17	8.6
2	22	32	35	90	43	179	377	338	230	45	16	8.6
3	21	31	59	95	43	176	389	287	215	41	16	8.6
4	21	32	70	100	43	181	328	273	195	38	16	8.6
5	20	32	60	103	43	166	282	261	177	35	16	9.0
6	20	32	50	96	43	148	272	236	162	34	16	9.0
7	20	32	45	83	43	146	259	230	148	35	16	8.9
8	19	32	40	67	43	154	248	227	148	42	15	8.6
9	19	30	45	52	43	153	240	214	166	40	15	8.6
10	19	28	50	52	43	159	234	201	183	36	14	8.6
11	23	26	45	52	44	157	230	188	195	35	14	8.6
12	22	25	40	52	45	159	223	173	206	33	13	8.5
13	24	25	40	52	72	165	213	160	217	33	12	8.6
14	32	25	40	52	135	169	205	156	223	32	12	8.6
15	33	25	45	52	347	174	210	187	232	31	11	8.6
16	32	25	45	52	500	185	223	194	215	30	11	8.6
17	33	25	45	52	767	179	239	222	191	29	11	8.2
18	33	27	45	52	643	164	246	263	178	29	10	8.2
19	31	30	45	52	640	162	274	366	167	28	10	8.2
20	31	33	50	52	599	182	419	387	158	27	11	8.2
21	30	30	56	53	516	193	446	433	150	25	11	8.6
22	29	28	64	69	393	198	451	414	142	26	10	8.6
23	28	28	73	76	283	212	450	393	134	26	10	8.9
24	28	28	79	70	277	209	456	362	126	25	10	9.1
25	29	28	103	50	249	222	445	392	116	23	9.6	9.7
26	31	28	234	50	228	416	454	396	107	22	9.4	10
27	33	32	251	50	207	396	484	354	97	22	9.0	11
28	32	36	233	50	194	381	463	323	87	21	8.9	13
29	32	37	203	50	---	397	451	298	66	19	8.6	14
30	32	38	170	50	---	402	423	273	61	18	8.6	14
31	32	---	140	50	---	388	---	260	---	17	8.6	---
TOTAL	833	893	2528	1966	6569	6755	10021	8854	4938	953	375.7	278.3
MEAN	26.9	29.8	81.5	63.4	235	218	334	286	165	30.7	12.1	9.28
MAX	33	38	251	103	767	416	484	433	246	56	17	14
MIN	19	25	28	50	43	146	205	156	61	17	8.6	8.2
AC-FT	1650	1770	5010	3900	13030	13400	19880	17560	9790	1890	745	552

CAL YR 1980 TOTAL 75371.0 MEAN 206 MAX 1030 MIN 16 AC-FT 149500
WTR YR 1981 TOTAL 44964.0 MEAN 123 MAX 767 MIN 8.2 AC-FT 89190

10396000 DONNER UND BLITZEN RIVER NEAR FRENCHGLEN, OR
(National stream-quality accounting network station)

LOCATION.--Lat 42°47'28", long 118°52'00", in NW¼NW¼ sec.20, T.32 S., R.32½ E., Harney County, Hydrologic Unit 17120003, Bureau of Land Management land, on left bank 1.5 mi (2.4 km) upstream from upper diversions for Malheur Migratory Waterfowl Refuge, 2.0 mi (3.2 km) downstream from Fish Creek, and 3.5 mi (5.6 km) southeast of Frenchglen.

DRAINAGE AREA.--200 mi² (518 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1911 to September 1913, March 1914 to September 1916, April 1917 to September 1921, August to November 1929, April to September 1930, December 1937 to current year. Monthly discharge only for some periods, published in WSP 1314. Published as "near Diamond" 1911-21. Records of discharge for January 1909 to September 1910 (published in WSP 270, 290, and 370, for a nonequivalent site as "near Diamond") have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 330: Drainage area (former site). WSP 860: Drainage area (present site). WSP 1564: 1938-39(M), 1942-43(M), 1948(M), 1951(P), 1952-53. WSP 1714: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,254 ft (1,297 m) National Geodetic Vertical Datum of 1929 (levels by Fish and Wildlife Service). Prior to December 1937, nonrecording gage at several sites within 2 mi (3 km) downstream at different datums. Dec. 6, 1937, to Feb. 14, 1938, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records excellent. No regulation or diversion above station.

AVERAGE DISCHARGE.--51 years (water years 1912-13, 1915-16, 1918-21, 1939-81), 122 ft³/s (3.455 m³/s), 88,390 acre-ft/yr (109 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,270 ft³/s (121 m³/s) Apr. 26, 1978, gage height, 7.15 ft (2.179 m) from floodmarks, from rating curve extended above 1,900 ft³/s (53.8 m³/s) on basis of slope-area measurement of peak flow; minimum, 4.2 ft³/s (0.12 m³/s) Dec. 9, 1972, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 650 ft³/s (18.4 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 14	1800	934	26.5	4.21	1.283	Mar. 28	1930	1,030	29.2	4.36	1.329
Feb. 16	2000	*1,670	47.3	a*5.23	1.594	May 1	2300	823	23.3	4.03	1.228
Mar. 25	1530	1,590	45.0	5.14	1.567	May 20	1630	1,210	34.3	4.62	1.408

Minimum, 25 ft³/s (0.71 m³/s) Dec. 8.

a From floodmark.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	52	46	57	38	78	218	613	355	96	46	41
2	49	52	58	55	58	76	165	608	341	90	46	41
3	49	51	57	55	60	74	132	439	279	87	46	41
4	48	52	57	61	49	76	106	377	288	83	46	41
5	48	51	49	54	57	74	120	318	322	81	46	41
6	48	51	49	47	57	67	151	296	355	81	44	41
7	48	58	48	52	49	72	129	259	283	92	43	41
8	48	63	46	51	52	79	120	229	322	79	43	39
9	48	57	39	54	61	78	117	218	305	74	42	39
10	48	55	54	54	51	74	113	233	226	70	43	39
11	48	54	57	49	51	74	111	226	198	68	43	39
12	51	49	47	55	55	76	111	215	222	65	42	39
13	54	48	42	51	81	79	115	215	198	63	43	39
14	57	57	49	52	619	78	125	259	195	61	44	39
15	57	57	57	52	336	79	162	255	183	60	43	39
16	57	49	55	49	630	88	168	263	168	58	42	38
17	55	55	58	54	439	76	176	252	168	57	42	38
18	55	52	54	49	212	79	189	300	156	55	42	38
19	55	49	52	49	244	87	283	318	205	54	42	38
20	55	48	54	48	173	202	377	720	218	54	43	39
21	55	51	55	49	148	183	314	677	183	52	42	39
22	52	54	57	54	173	215	300	336	168	51	42	41
23	52	55	51	60	162	117	364	305	153	51	41	41
24	52	51	51	72	113	92	511	327	140	49	41	41
25	54	46	198	60	90	591	517	486	132	49	39	46
26	58	49	117	49	87	377	453	448	132	49	39	43
27	57	52	87	54	81	390	381	390	120	48	39	47
28	52	52	70	70	81	527	355	377	106	48	41	54
29	54	51	65	61	---	420	411	385	100	47	39	46
30	54	51	61	57	---	215	482	416	96	47	41	43
31	52	---	60	49	---	171	---	411	---	47	41	---
TOTAL	1619	1572	1900	1683	4307	4964	7276	11171	6317	1966	1316	1231
MEAN	52.2	52.4	61.3	54.3	154	160	243	360	211	63.4	42.5	41.0
MAX	58	63	198	72	630	591	517	720	355	96	46	54
MIN	48	46	39	47	38	67	106	215	96	47	39	38
AC-FT	3210	3120	3770	3340	8540	9850	14430	22160	12530	3900	2610	2440

CAL YR 1980 TOTAL 57041 MEAN 156 MAX 800 MIN 29 AC-FT 113100
WTR YR 1981 TOTAL 45322 MEAN 124 MAX 720 MIN 38 AC-FT 89900

10396000 DONNER UND BLITZEN RIVER NEAR FRENCHGLEN, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to September 1981 (discontinued).
SPECIFIC CONDUCTANCE: October 1975 to September 1981 (discontinued).
WATER TEMPERATURES: October 1975 to September 1981 (discontinued).

INSTRUMENTATION.--Water-quality monitor since September 1980.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 219 micromhos July 23, 1976; minimum daily, 24 micromhos May 31, 1977.
WATER TEMPERATURES: Maximum, 28.5°C July 31, 1977; minimum, 0.0°C many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 109 micromhos Sept. 30; minimum daily, 35 micromhos May 2.
WATER TEMPERATURES: Maximum, 26.5°C Aug. 7, 11, 12; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT												
02...	1100	47	85	7.4	11.0	10.6	K2	K14	35	.00	8.4	3.5
28...	1230	54	83	7.7	5.0	11.8	K5	--	34	.00	8.3	3.3
DEC												
04...	1000	57	90	7.8	3.5	12.6	K6	K16	34	.00	8.0	3.3
30...	1100	63	89	7.9	1.5	11.6	K430	K9	31	.00	7.7	2.9
JAN												
28...	1000	67	84	7.0	2.5	11.6	K13	36	37	.00	9.0	3.5
FEB												
24...	1000	111	74	7.4	3.5	11.1	K5	K8	32	.00	7.6	3.2
MAR												
26...	0900	354	66	7.4	3.0	12.6	K12	K27	31	8.0	7.3	3.2
APR												
15...	0945	159	69	--	10.0	9.8	K7	--	31	.00	7.5	2.9
MAY												
28...	0955	399	52	7.3	9.0	11.0	K6	22	23	.00	5.3	2.3
JUL												
09...	0930	77	74	--	15.0	8.7	K12	28	40	.00	11	3.1
AUG												
05...	1005	46	94	7.5	17.0	8.8	K14	31	37	.00	9.0	3.5
SEP												
02...	1100	41	97	7.7	12.0	10.0	K5	K13	35	.00	8.4	3.3

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT												
02...	5.5	1.4	48	2.4	.7	.1	.22	<.010	.31	<.010	.68	.91
28...	4.6	1.3	47	<1.0	.9	.1	--	.010	.56	.020	.66	.92
DEC												
04...	4.9	1.3	46	1.4	.7	.1	.38	.050	.32	.020	.39	.77
30...	5.3	1.1	41	<1.0	.5	.1	.36	.050	.55	.040	.52	.88
JAN												
28...	7.2	1.4	40	2.5	.8	.1	.27	.080	.41	.080	--	--
FEB												
24...	4.5	1.4	36	3.9	.7	.1	.18	.090	.80	.080	1.00	1.2
MAR												
26...	4.6	1.9	23	16	1.6	.1	<.10	.110	.79	.130	.70	.77
APR												
15...	4.1	1.3	32	3.2	.5	.1	<.10	.060	.28	.060	1.20	1.3
MAY												
28...	3.2	.8	31	1.2	<.1	<.1	--	.080	.54	--	.65	.80
JUL												
09...	5.1	1.3	44	1.2	.2	.1	<.10	.090	.41	--	.60	.66
AUG												
05...	5.3	1.6	42	<1.0	.6	.1	.11	.140	.34	.160	.55	.66
SEP												
02...	5.0	1.5	40	<5.0	8.0	.1	<.10	.020	.55	.070	.54	.56

10396000 DONNER UND BLITZEN RIVER NEAR FRENCHGLEN, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C)	CARBON, ORGANIC TOTAL (MG/L AS C)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	TURBIDITY (NTU)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT												
02...	.020	.030	1.9	.3	--	30	82	82	2.2	--	--	--
28...	.060	.060	--	--	2.2	29	71	76	2.0	5	.73	66
DEC												
04...	.030	.030	--	--	3.4	30	83	79	2.0	10	1.5	64
30...	.030	.050	2.7	.2	3.0	28	66	72	1.2	6	1.0	77
JAN												
28...	.040	.090	--	--	7.1	29	--	79	31	8	1.4	88
FEB												
24...	.080	.130	--	--	4.5	30	--	74	36	17	5.1	56
MAR												
26...	.200	.210	--	--	12	31	--	80	120	114	109	67
APR												
15...	.080	.200	3.2	.8	--	28	--	69	34	67	29	92
MAY												
28...	.010	.080	--	--	2.3	18	50	50	7.1	41	44	73
JUL												
09...	.030	.050	2.8	.1	--	25	66	74	1.9	10	2.1	70
AUG												
05...	.000	.020	--	--	1.3	28	79	--	1.7	6	.75	47
SEP												
02...	.040	.020	--	--	2.6	29	78	--	28	2	.22	63

DATE	ARSENIC DISSOLVED (UG/L AS AS)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)
OCT										
02...	1	1	10	<100	<1	<1	<10	20	<3	<1
DEC										
30...	1	3	10	<100	<1	<1	<10	<10	<3	1
APR										
15...	<1	1	<2	<100	<1	1	10	30	<3	2
JUL										
09...	1	7	80	<100	<1	<1	10	10	<3	1

DATE	COPPER, DISSOLVED (UG/L AS CU)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)
OCT									
02...	1	7	40	260	2	3	2	20	<.1
DEC									
30...	<1	4	100	490	2	1	4	20	--
APR									
15...	7	14	1500	3800	1	1	60	70	<.1
JUL									
09...	2	3	60	290	2	<1	<1	<10	<.1

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, DISSOLVED (UG/L AS NI)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT									
02...	<.1	<1	2	<1	<1	<1	<1	<3	60
DEC									
30...	.1	<1	1	<1	<1	<1	<1	10	10
APR									
15...	.4	3	4	<1	<1	<1	<1	10	10
JUL									
09...	.6	1	1	<1	<1	<1	<1	10	10

10396000 DONNER UND BLITZEN RIVER NEAR FRENCHGLEN, OR--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981

DATE	OCT 28,80	FEB 24,81	MAR 26,81	MAY 28,81	AUG 5,81	SEP 2,81
TIME	1230	1000	0900	0955	0000	1100
TOTAL CELLS/ML	52	26	900	330	570	7800
DIVERSITY: DIVISION	0.0	0.0	1.4	1.0	1.1	1.5
.CLASS	0.0	0.0	1.4	1.0	1.1	1.5
..ORDER	0.8	1.0	2.3	2.5	2.1	2.4
...FAMILY	1.5	1.0	2.4	2.6	2.2	2.7
....GENUS	1.5	1.0	2.6	2.8	2.2	2.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)												
.BACILLARIOPHYCEAE												
..ACHNANTHALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	56	6	14	4	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	350	4
....RHOICOSPHENIA	--	-	--	-	--	-	28	8	14	2	--	-
..BACILLARIALES												
...NITZSCHIACEAE												
....NITZSCHIA	--	-	--	-	70	8	55#	17	110#	20	1100	14
..EUPODISCALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	13#	50	42	5	14	4	--	-	--	-
....MELOSIRA	--	-	--	-	110	13	--	-	--	-	180	2
..FRAGILARIALES												
...FRAGILARIACEAE												
....DIATOMA	--	-	--	-	--	-	14	4	--	-	--	-
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	310	4
....SYNEDRA	--	-	--	-	--	-	28	8	--	-	--	-
..NAVICULALES												
...CYMBELLACEAE												
....AMPHORA	--	-	--	-	--	-	--	-	14	2	--	-
....CYMBELLA	--	-	13#	50	14	2	--	-	--	-	180	2
...GOMPHONEMACEAE												
....GOMPHONEMA	13#	25	--	-	28	3	14	4	14	2	880	11
...NAVICULACEAE												
....NAVICULA	26#	50	--	-	70	8	28	8	14	2	790	10
..SURIRELLALES												
...SURIRELLACEAE												
....SURIRELLA	13#	25	--	-	--	-	14	4	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	14	2	--	-
...DICTYOSPHAERIACEAE												
....DICTYOSPHAERIUM	--	-	--	-	56	6	--	-	--	-	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	--	-	--	-	--	-	--	-	--	-	2300#	29
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	28	3	--	-	14	2	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..NOSTOCALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	97#	17	1800#	22
..OSCILLATORIALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	420#	47	120#	38	280#	49	--	-

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

10396000 DONNER UND BLITZEN RIVER NEAR FRENCHGLEN, OR--Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	81	84	---	93	82	72	43	50	---	91	96
2	84	81	85	---	95	83	74	39	50	---	91	94
3	85	82	86	---	94	83	77	46	55	---	91	93
4	85	82	84	---	94	83	80	49	54	---	92	92
5	85	83	85	---	91	83	78	52	---	---	93	93
6	86	83	86	---	86	84	73	53	---	---	93	93
7	86	82	90	---	86	84	74	55	---	---	94	93
8	87	79	96	---	92	80	75	58	---	---	94	94
9	86	81	---	---	92	80	76	60	---	77	95	95
10	86	82	99	---	94	82	76	59	---	76	95	95
11	86	83	96	---	88	82	76	60	---	78	95	95
12	86	83	94	---	85	82	73	62	---	79	95	95
13	84	84	92	---	78	81	71	63	---	80	95	95
14	83	81	94	---	50	81	71	64	---	81	95	96
15	83	84	91	---	63	79	70	69	---	82	96	96
16	83	84	---	---	---	77	71	70	---	83	96	97
17	84	87	---	---	---	78	71	75	---	84	95	97
18	84	87	---	---	---	79	70	75	---	85	95	97
19	85	85	---	---	---	79	64	74	---	85	94	97
20	85	86	---	---	80	69	56	69	---	86	95	97
21	85	87	---	---	80	72	61	56	---	87	95	97
22	84	85	---	---	75	---	63	61	---	87	95	97
23	84	---	---	---	70	---	59	61	---	89	96	97
24	85	88	---	---	76	---	50	59	---	89	96	96
25	84	84	---	---	80	---	50	53	---	89	96	97
26	83	85	79	---	81	---	52	51	---	89	96	98
27	83	---	91	---	82	---	57	53	---	90	96	99
28	81	---	91	---	81	66	58	53	---	91	96	99
29	79	85	89	84	---	62	54	50	---	91	96	100
30	79	84	88	85	---	68	50	49	---	91	96	105
31	80	---	---	88	---	72	---	48	---	91	96	---
MEAN	84	84	89	86	83	78	67	58	52	85	95	96

10396000 DONNER UND BLITZEN RIVER NEAR FRENCHGLEN, OR--Continued

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

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.5	9.5	7.5	5.5	2.0	.0	2.0	.0	.5	.0	8.5	2.0
2	17.0	8.5	10.5	5.5	5.0	1.0	1.0	.0	.0	.0	8.5	2.5
3	17.5	9.0	11.5	6.0	6.5	3.5	1.0	.0	.5	.0	8.0	2.0
4	17.5	9.5	11.5	6.0	5.0	1.5	3.5	1.0	.5	.0	5.5	3.0
5	18.0	9.5	10.0	5.0	2.5	.5	3.0	1.5	.5	.0	5.0	2.0
6	18.0	10.0	9.0	7.0	1.5	.0	2.0	1.0	1.5	.0	8.0	.5
7	18.0	10.0	10.5	8.0	.5	.0	2.5	.0	.5	.0	6.5	2.0
8	17.5	10.0	8.0	5.5	.0	.0	2.0	.0	1.0	.0	9.5	3.0
9	15.0	8.5	8.0	5.5	.0	.0	2.0	.0	1.5	.0	10.0	3.0
10	14.5	7.0	7.0	4.0	.0	.0	2.5	.5	1.5	.0	10.0	3.5
11	13.0	7.5	6.5	3.5	.0	.0	1.0	.0	3.0	.0	10.5	3.0
12	12.0	8.0	3.5	.5	.0	.0	.5	.0	6.0	.0	10.5	3.5
13	8.5	6.0	3.0	.0	.0	.0	.5	.0	3.0	.5	8.5	4.5
14	7.5	5.0	1.0	.0	.0	.0	1.0	.0	2.5	.5	9.5	3.5
15	6.0	4.5	3.5	.5	.5	.0	.5	.0	3.5	1.0	8.5	3.5
16	6.5	4.5	1.5	.0	.5	.0	1.0	.0	3.5	2.0	6.0	2.5
17	10.0	3.0	4.0	.0	1.0	.0	4.0	.0	3.0	1.0	9.0	1.0
18	10.5	3.5	4.5	.5	1.0	.0	4.5	1.0	5.0	2.5	3.5	1.0
19	11.5	4.5	4.5	.5	2.0	.0	5.5	2.0	5.0	2.0	5.0	2.5
20	12.0	5.0	4.5	.0	2.5	.0	6.5	1.5	4.0	1.0	5.5	3.0
21	11.0	5.5	3.0	1.0	3.5	1.0	6.0	4.0	5.5	.0	7.0	2.0
22	9.0	3.0	5.5	3.0	4.5	2.0	6.0	4.5	6.0	1.0	6.5	2.5
23	8.0	1.5	4.5	3.0	3.5	1.0	5.5	4.0	5.0	3.0	8.5	4.0
24	8.0	3.0	4.5	.5	4.5	2.0	4.0	2.5	4.5	1.5	8.5	3.5
25	7.0	5.5	3.0	.0	5.0	2.0	4.0	.0	5.5	1.0	7.0	5.0
26	7.5	5.0	4.0	.0	6.0	4.5	3.0	.0	5.0	.5	6.0	2.5
27	7.0	3.5	5.0	.5	6.0	4.0	4.0	.0	6.5	.5	6.0	2.0
28	8.0	2.0	5.5	2.5	5.0	1.5	3.0	1.5	7.0	1.5	8.0	1.5
29	8.0	2.0	5.5	3.5	4.0	1.0	3.0	1.0	---	---	6.0	3.0
30	6.0	2.5	4.0	1.0	3.5	1.0	1.5	.0	---	---	5.0	1.5
31	9.0	4.0	---	---	2.5	.5	2.0	.0	---	---	5.5	3.5
MONTH	18.0	1.5	11.5	.0	6.5	.0	6.5	.0	7.0	.0	10.5	.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.5	3.5	11.5	6.5	13.5	9.0	22.0	14.5	24.5	14.0	22.0	11.0
2	8.0	3.0	8.5	4.5	13.0	9.0	22.5	13.5	24.0	13.0	21.0	11.0
3	7.0	3.0	9.0	4.0	13.5	8.5	23.5	15.5	24.0	13.5	21.5	11.0
4	10.5	2.5	8.5	5.5	14.5	10.5	25.0	16.5	25.0	14.0	19.5	11.5
5	12.0	5.0	9.5	5.5	15.0	10.0	23.0	16.5	25.5	14.5	21.0	11.5
6	9.5	4.5	7.0	4.0	14.0	10.5	19.5	15.0	26.0	15.0	21.0	10.5
7	6.5	3.5	8.0	4.0	12.5	10.0	19.0	12.5	26.5	15.5	22.0	11.5
8	7.5	2.5	10.5	5.5	10.0	8.5	21.0	10.5	26.0	15.5	23.5	13.0
9	9.0	5.0	13.0	8.5	11.0	7.0	22.5	12.0	26.0	15.5	23.0	13.5
10	9.5	3.5	12.0	8.5	14.0	9.5	22.5	13.5	26.0	15.5	22.0	12.5
11	10.5	4.5	10.5	7.0	13.5	10.0	22.5	12.5	26.5	15.0	22.0	11.5
12	11.5	4.5	11.5	6.0	11.0	7.5	22.0	12.0	26.5	15.0	22.5	12.0
13	12.0	4.0	12.0	7.5	8.5	6.5	22.5	12.5	23.5	15.5	22.0	12.0
14	13.5	5.5	10.5	8.0	12.0	6.0	22.5	12.0	24.5	14.0	22.5	13.0
15	12.0	7.5	8.0	5.5	16.0	8.5	24.5	13.0	25.5	14.0	21.5	12.0
16	11.5	7.5	7.0	3.5	15.5	11.5	24.5	14.5	25.5	13.5	21.5	11.5
17	11.5	7.5	9.5	6.0	15.0	9.0	25.5	15.0	20.5	14.0	21.5	12.0
18	12.0	8.0	10.0	8.5	16.0	10.0	24.5	15.0	20.0	15.0	21.0	12.5
19	10.5	8.5	10.0	7.0	16.5	12.5	25.0	14.0	19.0	14.5	20.0	12.5
20	8.5	6.0	9.5	7.5	17.0	11.5	25.0	14.5	22.5	12.0	16.5	9.5
21	8.0	6.5	8.5	6.5	18.0	11.5	25.0	15.0	23.0	12.0	17.0	8.5
22	12.0	7.0	11.0	7.5	18.5	12.5	25.0	14.0	23.5	12.5	16.5	8.0
23	12.0	7.5	11.5	8.5	19.0	13.0	24.5	13.5	23.5	13.0	14.5	7.0
24	10.0	6.5	12.0	10.0	20.5	12.5	24.0	13.5	22.5	13.5	9.5	7.5
25	7.0	5.0	12.0	9.5	21.0	14.5	24.0	13.5	22.5	12.5	13.5	7.5
26	6.5	5.0	12.5	8.0	22.5	15.0	24.5	14.0	23.0	12.0	12.5	7.5
27	9.5	4.0	13.0	8.0	20.0	14.0	25.5	14.0	23.0	13.0	15.0	9.5
28	11.5	7.0	13.5	8.5	20.5	12.0	25.5	15.0	23.0	12.5	15.5	10.5
29	11.5	8.0	14.5	9.5	22.0	12.5	25.0	14.5	21.5	12.5	15.5	8.5
30	11.5	7.5	14.5	10.0	22.5	14.5	24.0	13.5	21.5	12.5	14.5	6.0
31	---	---	12.5	7.5	---	---	24.5	13.5	21.5	11.0	---	---
MONTH	13.5	2.5	14.5	3.5	22.5	6.0	25.5	10.5	26.5	11.0	23.5	6.0

10406500 TROUT CREEK NEAR DENIO, NV

LOCATION.--Lat 42°09'20", long 118°27'30", in SW¼ sec.26, T.39 S., R.36 E., Harney County, Hydrologic Unit 17120009, on right bank 0.4 mi (0.6 km) upstream from bridge at mouth of canyon, 5 mi (8 km) east of Trout Creek Ranch, and 14 mi (23 km) northeast of Denio.

DRAINAGE AREA.--88 mi² (228 km²), approximately.

PERIOD OF RECORD.--March 1911 to March 1912, April 1922 to November 1923, March 1925 to September 1931 (irrigation seasons only), April 1932 to current year. Prior to Oct. 1, 1961, published as "near Denio, Oreg."

REVISED RECORDS.--WSP 1564: 1932, 1933-34(M), 1938(M). WSP 1714: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,351.52 ft (1,326.343 m) National Geodetic Vertical Datum of 1929. Mar. 25, 1911, to Mar. 31, 1912, nonrecording gage at bridge 0.4 mi (0.6 km) downstream at different datum. Apr. 28, 1922, to June 14, 1932, water-stage recorder at site 10 ft (3 m) upstream at datum 0.50 ft (0.152 m) higher.

REMARKS.--Records good. No regulation. Diversions for irrigation above station.

AVERAGE DISCHARGE.--50 years (water years 1923, 1933-81), 15.5 ft³/s (0.439 m³/s), 11,230 acre-ft/yr (13.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 470 ft³/s (13.3 m³/s) Aug. 1, 1933, gage height, 5.26 ft (1.603 m), from rating curve extended above 230 ft³/s (6.51 m³/s); minimum observed, 0.10 ft³/s (0.030 m³/s) Aug. 4, 1930, Aug. 1, Sept. 12, 28, 1934. Probably no flow at times Sept. 1-19, 1951.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 6.0 ft (1.83 m), caused by cloudburst, probably occurred in 1924 or 1925.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft³/s (1.42 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 20	0100	50	1.42	2.74	0.835	May 2	0100	*84	2.38	*3.04	0.927
Apr. 25	0230	55	1.56	2.80	0.853	May 25	1300	59	1.67	2.97	0.905

Minimum, 0.54 ft³/s (0.015 m³/s) Sept. 11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	5.4	4.0	6.2	6.0	9.7	21	56	26	7.0	3.5	1.9
2	5.4	5.4	5.5	6.2	6.0	9.4	19	58	26	6.8	3.1	1.9
3	6.3	5.2	7.5	6.6	6.0	9.2	19	40	26	7.2	3.1	1.9
4	6.3	4.8	6.5	7.0	5.7	9.7	17	32	22	7.0	3.1	1.9
5	6.3	4.8	5.5	6.8	5.4	10	17	27	21	7.2	3.2	1.6
6	6.3	4.7	4.8	6.3	5.7	9.4	19	27	19	13	3.1	1.5
7	6.3	4.5	4.3	6.8	6.2	8.9	19	23	19	11	3.1	1.6
8	6.1	4.7	4.0	6.8	6.2	9.2	20	20	19	10	2.9	1.5
9	6.1	4.7	4.0	6.0	6.2	8.6	20	18	19	9.4	2.7	1.3
10	6.3	4.7	4.0	5.4	5.4	8.9	20	18	17	8.3	2.7	.86
11	6.3	4.5	4.0	5.4	5.4	8.9	19	18	15	7.8	2.8	.60
12	7.0	4.5	4.0	5.4	5.4	8.9	19	18	18	7.2	2.8	.65
13	7.8	4.5	4.0	5.4	6.4	9.2	19	17	19	6.8	2.8	.86
14	8.0	4.5	4.0	5.4	7.5	9.2	20	29	17	6.8	2.8	.98
15	8.0	4.5	5.5	5.4	9.4	8.9	23	35	14	6.3	2.7	1.1
16	9.2	4.5	6.5	5.4	9.7	10	23	29	13	5.2	2.5	1.2
17	8.0	4.5	5.5	5.4	14	8.6	27	25	11	5.0	2.3	1.4
18	7.2	4.5	4.0	5.8	11	8.6	29	32	12	5.0	2.5	1.2
19	7.0	4.5	4.0	6.2	12	11	42	35	11	5.0	2.5	1.3
20	6.8	4.5	4.0	6.8	13	11	43	37	11	5.0	2.5	1.8
21	6.5	4.5	4.0	6.8	10	9.7	39	29	12	4.8	2.2	2.1
22	6.5	4.5	4.0	6.8	12	10	39	26	11	4.7	2.1	2.9
23	6.3	4.5	5.0	7.8	11	10	41	25	11	4.3	2.0	3.5
24	6.3	4.5	7.5	8.0	11	10	44	29	10	4.2	1.8	3.6
25	6.3	4.5	10	7.0	10	13	47	48	9.4	4.5	1.8	4.7
26	7.2	3.7	9.7	6.1	10	16	58	40	8.3	4.3	1.8	4.5
27	6.8	3.5	9.4	8.0	10	18	29	36	7.5	4.5	1.8	4.0
28	6.1	3.5	8.6	8.6	10	20	28	35	7.2	4.3	1.8	4.5
29	5.9	3.7	8.3	7.5	---	22	35	32	7.2	4.3	1.8	4.7
30	5.9	4.0	7.8	7.0	---	21	46	31	7.2	4.0	1.8	4.3
31	5.7	---	7.0	6.0	---	20	---	31	---	3.8	2.0	---
TOTAL	205.4	134.8	176.9	200.3	236.6	357.0	841	956	445.8	194.7	77.6	65.85
MEAN	6.63	4.49	5.71	6.46	8.45	11.5	28.0	30.8	14.9	6.28	2.50	2.20
MAX	9.2	5.4	10	8.6	14	22	47	58	26	13	3.5	4.7
MIN	5.2	3.5	4.0	5.4	5.4	8.6	17	17	7.2	3.8	1.8	.60
AC-FT	407	267	351	397	469	708	1670	1900	884	386	154	131

CAL YR 1980 TOTAL 8097.50 MEAN 22.1 MAX 127 MIN 2.8 AC-FT 16060
WTR YR 1981 TOTAL 3891.95 MEAN 10.7 MAX 58 MIN .60 AC-FT 7720

NOTE.--No gage-height record Nov. 13 to Dec. 16.

GOOSE LAKE BASIN

11339500 DREWS CREEK NEAR LAKEVIEW, OR

LOCATION.--Lat 42°07'10", long 120°34'45", in NW¼NE¼ sec.10, T.40 S., R.18 E., Lake county, Hydrologic Unit 18020001, on left bank 10 ft (3 m) upstream from bridge, 2.0 mi (3.2 km) downstream from Willow Creek, 2.7 mi (4.3 km) downstream from Drews Dam, and 13 mi (21 km) southwest of Lakeview.

DRAINAGE AREA.--212 mi² (549 km²).

PERIOD OF RECORD.--January 1909 to September 1930 (yearly estimate only for water year 1920), March 1931 to September 1936 (irrigation seasons only), April 1937 to September 1938, March 1939 to October 1941, February 1942, April 1942 to September 1952, February 1953 to September 1981 (see also REMARKS). Monthly discharge only October 1921 to September 1925, published in WSP 1315-A. Published as Drew Creek near Lakeview October 1918 to September 1959.

REVISED RECORDS.--WSP 1565: 1909-10, 1913, 1918(M). WRD Oreg. 1974: 1972(M). WSP 1735: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,827.0 ft (1,471.27 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). See WSP 1931 for history of changes prior to July 4, 1953.

REMARKS.--Records excellent except those for October to January, which are good. Record herein, except average discharge, not adjusted for diversion by North Drews Canal. Since 1912, flow regulated by Drews Reservoir, capacity, 62,550 acre-ft (77.1 hm³). Diversion for irrigation above station, and since March 1914, North Drews Canal has diverted above station for irrigation of lands west of Lakeview. Records subsequent to September 1981 in files of Oregon Water Resources Department.

AVERAGE DISCHARGE.--50 years (water years 1913-30, 1938, 1940-41, 1947, 1954-81), 70.6 ft³/s (1.999 m³/s), 51,150 acre-ft/yr (63.1 hm³/yr), including diversion by North Drews Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 3,000 ft³/s (85.0 m³/s) Mar. 1, 2, 1910, from rating curve extended above 1,200 ft³/s (34.0 m³/s); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 70 ft³/s (1.98 m³/s) July 30; maximum gage height, 1.92 ft (0.585 m) Mar. 25, backwater from debris; minimum discharge, 0.56 ft³/s (0.016 m³/s) Oct. 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.84	.84	.90	1.6	1.6	2.9	18	8.4	46	60	67	49
2	.84	.72	.90	1.6	1.6	2.9	11	8.0	46	60	66	46
3	.72	.84	1.0	2.0	1.6	3.1	8.8	8.0	46	60	60	46
4	.72	.84	1.1	1.7	1.6	3.8	8.0	24	48	60	58	42
5	.72	.84	.90	1.6	1.6	3.8	7.6	29	54	60	52	39
6	.72	.84	.80	1.6	1.6	3.6	6.9	32	54	60	52	37
7	.72	1.2	.70	1.6	1.6	3.6	6.9	32	54	58	52	41
8	.60	1.1	.70	1.4	1.6	3.6	6.6	32	55	54	52	54
9	.60	.96	.70	1.6	1.6	3.6	6.6	32	56	53	52	53
10	.60	.96	.90	1.6	2.0	3.3	6.2	31	56	53	52	54
11	.60	.96	1.2	1.6	2.5	3.3	6.2	41	58	53	52	54
12	.84	.84	1.4	1.6	3.6	3.1	6.2	56	54	55	58	54
13	.96	.84	2.0	1.6	3.8	3.1	5.9	59	48	52	58	54
14	.84	.84	2.7	1.6	26	3.8	5.9	64	46	60	56	45
15	1.2	.84	2.9	1.6	14	3.6	5.3	64	46	62	52	32
16	1.3	.84	2.5	1.6	26	4.3	5.3	54	46	64	52	32
17	1.2	.84	2.2	1.6	11	3.8	5.3	62	46	65	52	29
18	1.2	.84	2.7	1.5	8.8	3.6	5.3	58	41	64	49	27
19	1.1	.84	2.9	1.6	13	4.3	5.9	52	41	62	43	26
20	.96	.84	1.8	1.6	8.4	4.3	5.9	52	41	60	43	25
21	.96	.84	4.0	1.6	6.2	3.8	5.6	43	40	58	46	28
22	.96	.96	2.5	1.6	5.3	4.0	5.0	38	41	58	46	31
23	.96	.96	1.8	1.6	4.3	4.3	5.3	38	50	60	46	28
24	.96	.96	1.8	1.6	4.3	4.0	5.3	40	50	62	46	24
25	1.1	.96	3.8	1.6	3.8	26	5.3	39	52	61	47	21
26	.96	.85	2.2	1.7	3.6	24	5.6	38	53	58	48	21
27	1.1	1.0	1.7	1.8	3.1	12	5.9	38	53	56	49	21
28	.96	1.1	1.6	1.8	2.9	8.4	8.8	38	52	55	49	21
29	.84	1.0	1.6	2.2	---	12	8.8	41	50	64	50	18
30	.84	.90	1.6	1.8	---	8.8	8.4	41	53	68	53	1.4
31	.84	---	1.6	1.6	---	8.0	---	42	---	67	52	---
TOTAL	27.76	27.19	55.10	51.2	167.0	186.7	207.8	1234.4	1476	1852	1610	1053.4
MEAN	.90	.91	1.78	1.65	5.96	6.02	6.93	39.8	49.2	59.7	51.9	35.1
MAX	1.3	1.2	4.0	2.2	26	26	18	64	58	68	67	54
MIN	.60	.72	.70	1.4	1.6	2.9	5.0	8.0	40	55	43	1.4
AC-FT	55	54	109	102	331	370	412	2450	2930	3670	3190	2090
(†)	0	0	0	0	0	0	535	3900	5020	5160	4820	2770
(‡)	a27050	a27910	a29610	a32050	a35590	a41650	46480	a40720	a31920	a21430	12380	a7130

CAL YR 1980 TOTAL 13720.85 MEAN 37.5 MAX 285 MIN .60 AC-FT 27220
WTR YR 1981 TOTAL 7948.55 MEAN 21.8 MAX 68 MIN .60 AC-FT 15770

† Diversion, in acre-feet, North Drews Canal.
‡ Month-end contents, in acre-feet, of Drews Reservoir.
a Contents interpolated.

11340500 COTTONWOOD CREEK NEAR LAKEVIEW, OR

LOCATION.--Lat 42°14'14", long 120°30'16", in SE¼SW¼ sec.29, T.38 S., R.19 E., Lake County, Hydrologic Unit 18020001, on right bank 0.5 mi (0.8 km) downstream from Cottonwood Dam and 9 mi (14 km) northwest of Lakeview.

DRAINAGE AREA.--32.9 mi^2 (85.2 km^2).

PERIOD OF RECORD.--November 1908 to September 1919, May 1924 to November 1935, March to December 1936, April to December 1937, April 1938 to November 1942, March to November 1943, March to October 1944, February to November 1945, March 1946 to September 1981 (see also REMARKS). Monthly discharge only May 1924 to September 1925, published in WSP 1315-A.

REVISED RECORDS.--WSP 1565: 1910-11, 1919, 1929, 1937(M). WSP 1931: Drainage area (former site).

GAGE.--Water-stage recorder. Datum of gage is 4,949.37 ft (1,508.568 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to June 1, 1919, and May 1, 1924, to June 3, 1932, nonrecording gage at several sites within 0.6 mi (1.0 km) upstream at different datums. June 1 to Sept. 30, 1919, and June 4, 1932, to Sept. 14, 1961, water-stage recorder at site 0.6 mi (1.0 km) upstream at different datums.

REMARKS.--Records good except those for November, which are poor. Flow regulated since 1923 by Cottonwood Reservoir, capacity, 7,540 acre-ft (9.30 hm^3). Since October 1961, 240 acre-ft (295,900 m^3) unregulated storage in Cottonwood Meadows, 9 mi (14 km) upstream. Diversions for irrigation above station. Records subsequent to September 1981 in files of Oregon Water Resources Department.

AVERAGE DISCHARGE.--60 years (water years 1910-19, 1925-35, 1939-42, 1947-81), 21.1 ft^3/s (0.598 m^3/s), 15,290 acre-ft/yr (18.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, between 500 and 1,000 ft^3/s (14.2 and 28.3 m^3/s) during period Apr. 26 to May 1, 1927, when natural flow, estimated as 170 ft^3/s (4.81 m^3/s), was augmented by water escaping from reservoir through break in outlet conduit near control gates; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 61 ft^3/s (1.73 m^3/s) May 18, 19; maximum gage height, 1.99 ft (0.607 m) Dec. 13, backwater from ice; minimum discharge, 0.08 ft^3/s (0.002 m^3/s) Oct. 3.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	4.1	1.6	1.7	2.0	2.5	3.4	3.3	27	48	33	17
2	.10	4.1	1.7	1.7	2.0	2.5	3.3	4.4	54	35	32	20
3	1.0	4.1	1.8	1.8	2.0	2.5	2.9	7.0	39	29	26	20
4	3.1	4.1	1.8	1.8	2.0	2.5	2.9	18	37	28	23	18
5	3.3	4.1	1.8	1.8	2.2	2.7	2.9	12	46	25	23	15
6	3.3	4.1	1.8	1.8	2.2	2.7	2.9	10	46	23	21	14
7	3.3	4.1	1.8	1.8	2.2	2.7	2.9	20	46	23	21	15
8	3.3	1.6	1.8	1.8	2.0	2.9	3.1	35	46	21	21	9.8
9	3.3	1.6	1.8	1.8	2.0	2.9	3.1	35	44	17	23	9.8
10	3.4	1.6	1.8	1.8	2.0	2.9	3.1	35	32	16	29	10
11	3.6	1.6	2.0	2.0	2.0	2.9	3.1	26	34	16	29	10
12	3.6	1.6	2.0	2.0	2.2	2.9	3.1	13	32	17	29	10
13	3.6	1.6	2.0	2.0	2.2	2.9	3.1	18	35	23	28	10
14	3.6	1.6	2.0	2.0	2.5	2.7	3.1	22	37	23	28	11
15	3.6	1.6	2.0	2.0	2.5	2.7	3.1	20	35	22	28	13
16	3.6	1.6	2.0	2.0	4.1	2.7	3.1	18	35	22	28	15
17	3.6	1.6	2.0	2.0	2.9	2.7	2.9	17	35	21	27	15
18	3.6	1.6	2.0	2.0	3.1	2.7	3.1	30	30	18	26	15
19	3.6	1.6	2.0	2.0	3.6	2.7	3.3	33	27	18	21	15
20	3.6	1.6	2.0	2.0	2.9	2.7	3.3	14	27	18	20	15
21	3.6	1.6	2.2	2.0	2.7	2.7	3.3	12	27	18	18	15
22	3.6	1.6	2.0	2.0	2.7	2.7	3.3	1.2	29	19	17	33
23	3.8	1.6	1.8	2.2	2.7	2.7	3.3	1.2	34	21	13	46
24	3.8	1.5	1.8	2.2	2.7	2.9	3.3	1.2	39	22	15	45
25	4.1	1.6	1.8	2.2	2.5	4.1	3.3	1.2	43	22	18	39
26	4.1	1.6	1.8	2.2	2.5	3.6	3.3	1.2	41	26	18	35
27	4.1	1.6	1.8	2.2	2.5	3.4	3.3	1.3	41	35	18	28
28	4.1	1.5	1.8	2.2	2.5	3.3	3.3	1.3	39	34	17	28
29	4.1	1.5	1.7	2.0	---	3.8	3.3	1.3	41	34	14	28
30	4.1	1.6	1.7	2.0	---	3.4	3.3	1.3	48	34	15	16
31	4.1	---	1.7	2.0	---	3.4	---	1.3	---	34	15	---
TOTAL	103.70	65.2	57.8	61.0	69.4	90.4	94.7	415.2	1126	762	696	588.6
MEAN	3.35	2.17	1.86	1.97	2.48	2.92	3.16	13.4	37.5	24.6	22.5	19.6
MAX	4.1	4.1	2.2	2.2	4.1	4.1	3.4	35	54	48	35	46
MIN	.10	1.5	1.6	1.7	2.0	2.5	2.9	1.2	27	16	13	9.8
AC-FT	206	129	115	121	138	179	188	824	2230	1510	1380	1170
(†)	a1600	a1660	a1850	a2330	a2950	a3780	a5270	a5690	a4290	a2650	a1390	a443

CAL YR 1980 TOTAL 7706.31 MEAN 21.1 MAX 116 MIN .10 AC-FT 15290
WTR YR 1981 TOTAL 4130.00 MEAN 11.3 MAX 54 MIN .10 AC-FT 8190

† Month-end contents, in acre-feet, of Cottonwood Reservoir.
a Contents interpolated.

11491400 WILLIAMSON RIVER BELOW SHEEP CREEK, NEAR LENZ, OR

LOCATION.--Lat 42°54'42", long 121°28'32", in NE¼SW¼ sec.1, T.31 S., R.10 E., Klamath County, Hydrologic Unit 18010201, on left bank at Forest Service bridge, 0.1 mi (0.2 km) downstream from Sheep Creek and 17 mi (27 km) east of Lenz.

DRAINAGE AREA.--205 mi^2 (531 km^2).

PERIOD OF RECORD.--October 1973 to current year. Prior to October 1979, in reports of Oregon Water Resources Department.

GAGE.--Water-stage recorder. Altitude of gage is 4,550 ft (1,387 m), from topographic map.

REMARKS.--Records good except those for July to September, which are fair. Diversions for irrigation above station.

AVERAGE DISCHARGE.--8 years, 65.4 ft^3/s (1.852 m^3/s), 47,380 acre-ft/yr (58.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 246 ft^3/s (6.97 m^3/s) May 9, 10, 1974, gage height, 3.51 ft (1.070 m); minimum, 16 ft^3/s (0.45 m^3/s) Dec. 13, 1980, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 130 ft^3/s (3.68 m^3/s) Feb. 15; maximum recorded gage height, 2.06 ft (0.628 m) Dec. 9, backwater from ice; minimum discharge, 16 ft^3/s (0.45 m^3/s) Dec. 13, result of freezeup.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	52	57	63	58	59	57	47	49	43	39	39
2	51	52	63	62	58	58	56	47	49	42	39	37
3	50	52	72	61	58	58	57	47	49	43	39	37
4	49	51	69	61	58	58	56	47	49	42	39	37
5	49	52	63	61	58	57	56	47	49	43	37	40
6	50	58	57	60	58	57	55	47	49	43	37	40
7	48	57	52	60	58	58	55	47	49	42	36	40
8	48	54	52	60	58	57	56	47	53	42	38	40
9	49	53	52	60	58	57	55	47	53	41	38	40
10	49	53	52	59	60	57	54	47	50	41	38	39
11	50	52	52	59	63	57	55	47	49	40	37	40
12	50	52	52	59	67	57	54	47	50	40	34	40
13	50	52	52	58	75	57	54	47	50	41	39	41
14	49	52	54	57	100	57	53	47	50	41	37	41
15	49	52	56	58	130	56	50	47	49	40	37	41
16	48	53	59	58	100	56	49	49	48	37	39	41
17	48	52	59	59	110	55	48	49	47	37	39	41
18	48	53	59	59	100	55	48	49	51	34	39	41
19	49	53	59	58	90	57	48	49	51	37	38	41
20	50	53	60	59	100	57	48	49	48	38	36	41
21	50	55	62	60	75	56	47	49	47	40	38	41
22	51	60	64	62	66	56	47	49	46	39	39	41
23	52	60	62	64	62	56	47	49	45	39	39	41
24	53	60	63	62	60	56	47	49	44	38	39	41
25	53	58	67	60	59	58	47	49	46	36	39	41
26	54	57	66	58	59	58	47	49	46	36	39	41
27	53	57	65	60	58	57	47	49	42	36	39	44
28	53	57	64	66	59	56	47	49	45	37	40	44
29	53	57	64	68	---	56	47	49	45	38	40	42
30	53	57	64	68	---	56	47	49	44	39	40	42
31	53	---	63	60	---	56	---	49	---	39	40	---
TOTAL	1563	1636	1855	1879	2015	1761	1534	1489	1442	1224	1187	1215
MEAN	50.4	54.5	59.8	60.6	72.0	56.8	51.1	48.0	48.1	39.5	38.3	40.5
MAX	54	60	72	68	130	59	57	49	53	43	40	44
MIN	48	51	52	57	58	55	47	47	42	34	34	37
AC-FT	3100	3250	3680	3730	4000	3490	3040	2950	2860	2430	2350	2410

CAL YR 1980 TOTAL 21045 MEAN 57.5 MAX 92 MIN 41 AC-FT 41740
WTR YR 1981 TOTAL 18800 MEAN 51.5 MAX 130 MIN 34 AC-FT 37290

NOTE.--No gage-height record Jan. 22 to Feb. 25, Apr. 24 to June 3.

11492200 CRATER LAKE NEAR CRATER LAKE, OR
(Hydrologic bench-mark station)

LOCATION.--Lat 42°58'45", long 122°04'45", (unsurveyed) Crater Lake National Park and Vicinity Quadrangle, Klamath County, Hydrologic Unit 18010201, at boat harbor at end of trail in Cleetwood Cove and 6 mi (10 km) northeast of Crater Lake post office.

DRAINAGE AREA.--26.2 mi^2 (67.9 km^2), of which 20.5 mi^2 (53.1 km^2) is lake area at elevation 6,176 ft (1,882.4 m).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1961 to current year. 1878 to September 1961 (fragmentary records) available in files of Portland district office.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to September 1961, nonrecording gage and various reference points used near old boat landing at abandoned trail (Eagle Cove) directly across Lake.

REMARKS.--Crater Lake occupies the caldera of prehistoric Mount Mazama. It has no visible inlet or outlet. Over a period of years precipitation and runoff from snow melt on the walls of the crater are offset by seepage and evaporation. Records of accumulated annual precipitation, collected at the north rim of Crater Lake as part of the operation of this station, are published annually in reports of the National Weather Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 6,179.34 ft (1,883.463 m) Mar. 25, 1975; minimum observed, 6,163.2 ft (1,878.54 m) Sept. 10, 1942.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation known, 6,180.5 ft (1,883.82 m), average of several observations of line of crustose lichens made between 1916 and 1960; that stage may have occurred near the close of the 19th century. The occurrence of living pine trees slightly higher suggests that the lake has not been materially higher for several centuries.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 6,172.83 ft (1,881.478 m) Feb. 19; minimum, 6,170.87 ft (1,880.881 m) Sept. 26.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6172.20	6171.81	6172.13	6172.54	6172.42	6172.77	6172.71	6172.54	6172.52	6172.54	6172.09	6171.45
2	6172.17	6171.77	6172.34	6172.54	6172.41	6172.75	6172.71	6172.52	6172.52	6172.52	6172.07	6171.42
3	6172.15	6171.77	6172.42	6172.52	6172.40	6172.75	6172.70	6172.52	6172.49	6172.52	6172.04	6171.41
4	6172.14	6171.75	6172.45	6172.52	6172.39	6172.73	6172.68	6172.50	6172.48	6172.52	6172.02	6171.38
5	6172.13	6171.74	6172.46	6172.49	6172.38	6172.71	6172.66	6172.50	6172.50	6172.50	6172.02	6171.36
6	6172.11	6171.86	6172.45	6172.48	6172.36	6172.70	6172.64	6172.48	6172.49	6172.52	6171.99	6171.33
7	6172.11	6172.09	6172.42	6172.48	6172.34	6172.68	6172.63	6172.47	6172.61	6172.49	6171.97	6171.31
8	6172.08	6172.13	6172.41	6172.46	6172.36	6172.67	6172.66	6172.47	6172.74	6172.48	6171.97	6171.30
9	6172.05	6172.13	6172.40	6172.45	6172.30	6172.66	6172.64	6172.46	6172.72	6172.47	6171.95	6171.27
10	6172.04	6172.11	6172.38	6172.42	6172.29	6172.64	6172.63	6172.45	6172.71	6172.45	6171.92	6171.27
11	6172.04	6172.09	6172.36	6172.41	6172.30	6172.63	6172.66	6172.43	6172.70	6172.43	6171.91	6171.25
12	6172.06	6172.07	6172.36	6172.40	6172.27	6172.63	6172.64	6172.42	6172.72	6172.42	6171.90	6171.22
13	6172.11	6172.05	6172.34	6172.39	6172.47	6172.63	6172.64	6172.41	6172.73	6172.40	6171.88	6171.20
14	6172.09	6172.06	6172.33	6172.38	6172.45	6172.59	6172.63	6172.40	6172.71	6172.38	6171.86	6171.20
15	6172.11	6172.02	6172.31	6172.36	6172.52	6172.68	6172.63	6172.45	6172.71	6172.38	6171.86	6171.17
16	6172.02	6172.00	6172.30	6172.32	6172.63	6172.67	6172.61	6172.42	6172.70	6172.36	6171.83	6171.15
17	6172.02	6171.98	6172.29	6172.34	6172.68	6172.64	6172.59	6172.47	6172.68	6172.36	6171.81	6171.14
18	6171.99	6171.96	6172.29	6172.32	6172.75	6172.65	6172.58	6172.52	6172.68	6172.33	6171.79	6171.13
19	6171.99	6171.95	6172.27	6172.31	6172.83	6172.65	6172.61	6172.54	6172.70	6172.31	6171.77	6171.08
20	6171.97	6171.93	6172.27	6172.31	6172.81	6172.63	6172.59	6172.52	6172.67	6172.29	6171.74	6171.05
21	6171.95	6172.04	6172.36	6172.29	6172.80	6172.70	6172.58	6172.50	6172.66	6172.29	6171.71	6171.02
22	6171.95	6172.05	6172.38	6172.39	6172.79	6172.70	6172.57	6172.50	6172.64	6172.27	6171.70	6170.98
23	6171.91	6172.11	6172.36	6172.40	6172.82	6172.66	6172.57	6172.52	6172.63	6172.24	6171.67	6170.95
24	6171.91	6172.07	6172.49	6172.38	6172.79	6172.68	6172.57	6172.57	6172.63	6172.22	6171.65	6170.92
25	6171.90	6172.05	6172.56	6172.36	6172.79	6172.70	6172.58	6172.57	6172.61	6172.20	6171.61	6170.88
26	6171.91	6172.04	6172.55	6172.39	6172.79	6172.70	6172.57	6172.56	6172.61	6172.20	6171.59	6170.92
27	6171.88	6172.04	6172.59	6172.45	6172.79	6172.67	6172.56	6172.55	6172.58	6172.18	6171.56	6171.04
28	6171.88	6172.04	6172.58	6172.49	6172.77	6172.70	6172.56	6172.55	6172.57	6172.16	6171.55	6171.00
29	6171.86	6172.08	6172.57	6172.48	---	6172.72	6172.55	6172.55	6172.56	6172.14	6171.52	6170.98
30	6171.83	6172.08	6172.56	6172.46	---	6172.71	6172.54	6172.54	6172.54	6172.13	6171.49	6170.97
31	6171.80	---	6172.55	6172.45	---	6172.74	---	6172.52	---	6172.11	6171.47	---
MEAN	6172.01	6172.00	6172.40	6172.42	6172.56	6172.68	6172.62	6172.50	6172.63	6172.35	6171.80	6171.16
MAX	6172.20	6172.13	6172.59	6172.54	6172.83	6172.77	6172.71	6172.57	6172.74	6172.54	6172.09	6171.45
MIN	6171.80	6171.74	6172.13	6172.29	6172.27	6172.59	6172.54	6172.40	6172.48	6172.11	6171.47	6170.88

CAL YR 1980 MEAN 6173.21 MAX 6174.14 MIN 6171.74
WTR YR 1981 MEAN 6172.26 MAX 6172.83 MIN 6170.88

11492200 CRATER LAKE NEAR CRATER LAKE, OR--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1963 to current year.

GAGE.--Stevens thermograph. Elevation of probe is 6,157 ft (1,876.7 m) National Geodetic Vertical Datum of 1929.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 18.5°C Aug. 9, 10, 1978; minimum, 0.5°C on several days in 1969.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum recorded, 16.0°C July 29, Aug. 1; minimum, 4.0°C many days from January through April.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT									
10...	1200	113	7.2	12.5	28	.00	6.9	2.6	9.9
JUN									
02...	1230	108	7.2	7.5	34	.00	9.3	2.7	11
JUL									
29...	1100	112	6.9	14.5	29	.00	7.4	2.6	10

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)
OCT									
10...	1.9	29	10	11	.1	--	--	<.1	<.10
JUN									
02...	1.8	40	12	9.0	.1	.100	.22	.13	.11
JUL									
29...	1.5	30	9.0	9.7	.1	.150	.21	.11	.13

DATE	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT									
10...	--	--	--	--	.650	--	17	80	77
JUN									
02...	.090	.25	.38	.030	.030	3.1	18	78	88
JUL									
29...	.210	.24	.35	.020	.020	.2	18	79	77

11492200 CRATER LAKE NEAR CRATER LAKE, OR--Continued

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

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13.0	12.5	9.5	9.0	6.5	6.0	5.5	5.0	4.5	4.5	4.5	4.0
2	13.0	12.5	9.0	9.0	6.0	6.0	5.5	5.0	5.0	4.5	5.0	4.0
3	13.0	12.5	9.0	9.0	6.0	6.0	5.0	5.0	5.0	4.5	4.5	4.5
4	13.0	12.5	9.0	9.0	6.0	5.5	5.0	5.0	4.5	4.5	4.5	4.0
5	13.0	13.0	9.0	9.0	5.5	5.5	5.0	5.0	4.5	4.5	4.5	4.0
6	13.0	13.0	9.0	8.5	5.5	5.5	5.0	5.0	4.5	4.5	4.5	4.0
7	13.0	12.5	8.5	8.5	5.5	5.5	5.0	5.0	5.0	4.5	4.5	4.0
8	13.0	12.5	8.5	8.5	5.5	5.5	5.0	5.0	4.5	4.5	4.5	4.0
9	13.0	12.5	8.5	8.0	5.5	5.5	5.0	5.0	4.5	4.5	4.5	4.0
10	12.5	12.0	8.0	8.0	5.5	5.5	5.0	5.0	4.5	4.5	5.0	4.0
11	12.5	12.0	8.0	7.5	5.5	5.5	5.0	5.0	4.5	4.5	5.0	4.0
12	12.0	11.5	8.0	7.5	5.5	5.5	5.0	5.0	5.0	4.5	5.0	4.5
13	11.5	11.0	8.0	7.5	5.5	5.5	5.0	5.0	4.5	4.5	5.0	4.0
14	11.5	11.0	7.5	7.5	5.5	5.5	5.0	5.0	4.5	4.5	5.0	4.5
15	11.0	10.5	7.5	7.5	5.5	5.5	5.0	5.0	4.5	4.5	4.5	4.5
16	10.5	10.5	7.5	7.5	5.5	5.5	5.0	5.0	4.5	4.5	4.5	4.5
17	10.5	10.5	7.5	7.0	5.5	5.5	5.0	5.0	4.5	4.5	4.5	4.5
18	10.5	10.5	7.5	7.0	5.5	5.5	5.0	5.0	4.5	4.5	4.5	4.0
19	10.5	10.5	7.5	7.0	5.5	5.5	5.0	4.5	4.5	4.5	4.5	4.0
20	10.5	10.5	7.5	7.0	5.5	5.5	5.0	4.5	4.5	4.0	4.5	4.0
21	10.5	10.5	7.0	7.0	5.5	5.0	5.0	4.5	4.5	4.5	4.5	4.0
22	10.5	10.5	7.0	7.0	5.0	5.0	4.5	4.5	5.0	4.5	4.5	4.0
23	10.5	10.0	7.0	6.5	5.5	5.0	4.5	4.5	4.5	4.5	4.5	4.0
24	10.5	10.0	7.0	6.5	5.0	5.0	4.5	4.5	4.5	4.0	4.5	4.0
25	10.0	10.0	7.0	7.0	5.0	5.0	5.0	4.5	4.5	4.0	4.5	4.0
26	10.0	9.5	7.0	7.0	5.0	5.0	4.5	4.5	4.5	4.0	4.5	4.0
27	10.0	9.5	7.0	6.5	5.0	5.0	4.5	4.5	4.5	4.0	5.0	4.0
28	10.0	9.5	7.0	6.5	5.5	5.0	4.5	4.5	4.5	4.0	4.5	4.0
29	9.5	9.5	6.5	6.5	5.0	5.0	4.5	4.5	---	---	4.5	4.0
30	9.5	9.5	6.5	6.0	5.5	5.0	4.5	4.0	---	---	4.5	4.0
31	9.5	9.5	---	---	5.5	5.0	4.5	4.0	---	---	4.0	4.0
MONTH	13.0	9.5	9.5	6.0	6.5	5.0	5.5	4.0	5.0	4.0	5.0	4.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	4.5	4.0	6.5	4.5	8.5	7.5	12.0	11.0	16.0	15.0		
2	4.5	4.0	6.5	5.5	8.5	6.5	12.0	11.0	15.5	15.0		
3	4.5	4.0	6.0	5.5	9.0	8.5	11.5	11.0	15.5	15.0		
4	5.0	4.0	6.0	5.0	9.0	8.0	13.5	11.0	15.5	15.5		
5	4.5	4.0	5.5	5.0	9.0	8.0	14.5	12.5	---	15.0		
6	4.5	4.0	5.5	5.0	9.0	8.5	13.0	12.5	15.5	15.0		
7	4.5	4.0	5.5	5.0	9.0	8.0	12.5	11.5	---	15.0		
8	4.5	4.0	5.5	5.0	8.0	8.0	12.0	11.5	---	---		
9	4.5	4.0	6.0	5.5	8.0	7.5	12.0	11.5	---	---		
10	4.5	4.0	6.0	5.5	8.0	7.5	12.5	11.5	---	---		
11	4.0	4.0	6.0	5.0	8.0	7.5	12.0	11.5	---	---		
12	4.5	4.0	6.0	5.5	8.0	7.5	12.5	11.5	---	---		
13	4.5	4.0	5.5	5.5	7.5	7.0	12.0	11.5	---	---		
14	5.0	4.0	5.5	5.0	7.5	7.0	12.0	11.5	---	---		
15	4.5	4.0	5.5	5.0	8.0	7.0	12.0	11.5	---	---		
16	5.0	4.0	6.0	5.5	8.0	7.0	12.5	12.0	---	---		
17	5.0	4.5	6.0	5.5	8.0	7.5	14.0	12.0	---	---		
18	5.0	4.0	6.0	5.5	8.0	7.5	14.5	13.0	---	---		
19	4.5	4.0	6.0	5.5	8.5	7.5	14.0	13.5	---	---		
20	5.0	4.0	5.5	5.5	8.5	8.0	14.0	13.0	---	---		
21	4.5	4.5	6.0	5.5	9.0	8.0	14.0	13.0	---	---		
22	5.0	4.5	6.0	5.5	9.0	8.5	14.0	13.0	---	---		
23	5.0	4.5	6.0	5.5	10.0	8.5	14.5	13.5	---	---		
24	5.0	4.5	7.0	6.0	9.5	9.0	15.0	14.0	---	---		
25	4.5	4.5	6.5	5.5	10.0	9.0	14.5	12.5	---	---		
26	4.5	4.5	7.0	6.5	10.5	9.0	14.5	12.0	---	---		
27	5.0	4.5	7.0	6.5	11.0	8.5	15.0	13.5	---	---		
28	5.0	4.5	7.0	6.5	10.0	9.0	15.0	13.5	---	---		
29	5.5	5.0	7.5	6.5	10.0	9.0	16.0	14.5	---	---		
30	5.5	5.0	9.5	6.5	11.5	10.0	15.0	14.5	---	---		
31	---	---	8.5	7.0	---	---	15.5	15.0	---	---		
MONTH	5.5	4.0	9.5	4.5	11.5	6.5	16.0	11.0	16.0	15.0		

11493500 WILLIAMSON RIVER NEAR KLAMATH AGENCY, OR

LOCATION.--Lat 42°44'25", long 121°50'00", in NW¼SW¼ sec.1, T.33 S., R.7 E., Klamath County, Hydrologic Unit 18010201, on right bank 250 ft (76 m) downstream from highway bridge, 0.6 mi (1.0 km) southwest of railroad station at Kirk, 10 mi (16 km) upstream from Spring Creek, and 10 mi (16 km) northeast of Klamath Agency.

DRAINAGE AREA.--1,290 mi² (3,340 km²), approximately.

PERIOD OF RECORD.--March 1908 to January 1909, April 1909 to June 1910, October 1954 to current year. Monthly discharge only June 1910, published in WSP 1315-B.

REVISED RECORDS.--WSP 1565: 1908-9.

GAGE.--Water-stage recorder. Datum of gage is 4,483.16 ft (1,366.467 m) National Geodetic Vertical Datum of 1929. Mar. 25, 1908, to June 30, 1910, nonrecording gage or water-stage recorder at two sites about 0.5 mi (0.8 km) upstream at different datums. Oct. 1, 1954, to Sept. 30, 1955, water-stage recorder at present site at datum 2.05 ft (0.625 m) higher.

REMARKS.--Records good. Flow affected by natural storage in Klamath Marsh. Small diversions above station for irrigation in vicinity of marsh.

AVERAGE DISCHARGE.--27 years (water years 1955-81), 199 ft³/s (5.636 m³/s), 144,200 acre-ft/yr (178 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 1,590 ft³/s (45.0 m³/s) Mar. 13, 1910, gage height, 3.7 ft (1.13 m), site and datum then in use, from rating curve extended above 800 ft³/s (22.7 m³/s); maximum gage height, 5.57 ft (1.753 m) Mar. 3, 1958; no flow at times during 1960-74, 1977-81.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 226 ft³/s (6.40 m³/s) Mar. 5, gage height, 4.14 ft (1.262 m); no flow Oct. 1 to Dec. 8, June 4 to Sept. 30.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	165	165	217	160	84	.13	.00	.00	.00
2	.00	.00	.00	170	162	214	160	78	.05	.00	.00	.00
3	.00	.00	.00	175	160	211	152	73	.03	.00	.00	.00
4	.00	.00	.00	178	155	217	155	67	.00	.00	.00	.00
5	.00	.00	.00	178	152	220	150	66	.00	.00	.00	.00
6	.00	.00	.00	180	152	211	152	64	.00	.00	.00	.00
7	.00	.00	.00	180	148	206	148	63	.00	.00	.00	.00
8	.00	.00	.00	180	143	206	141	61	.00	.00	.00	.00
9	.00	.00	10	180	136	206	141	58	.00	.00	.00	.00
10	.00	.00	19	180	134	206	139	51	.00	.00	.00	.00
11	.00	.00	23	180	134	203	130	37	.00	.00	.00	.00
12	.00	.00	29	178	132	197	134	30	.00	.00	.00	.00
13	.00	.00	34	175	134	197	136	24	.00	.00	.00	.00
14	.00	.00	40	175	145	194	134	19	.00	.00	.00	.00
15	.00	.00	44	172	155	191	130	16	.00	.00	.00	.00
16	.00	.00	48	170	162	191	130	14	.00	.00	.00	.00
17	.00	.00	53	167	183	191	130	9.6	.00	.00	.00	.00
18	.00	.00	56	167	189	189	128	8.5	.00	.00	.00	.00
19	.00	.00	60	165	186	189	124	10	.00	.00	.00	.00
20	.00	.00	63	165	197	189	122	9.6	.00	.00	.00	.00
21	.00	.00	69	160	200	183	120	7.2	.00	.00	.00	.00
22	.00	.00	73	145	203	180	118	5.7	.00	.00	.00	.00
23	.00	.00	82	157	200	178	108	3.4	.00	.00	.00	.00
24	.00	.00	89	160	203	175	106	2.8	.00	.00	.00	.00
25	.00	.00	104	162	209	175	103	2.4	.00	.00	.00	.00
26	.00	.00	116	162	209	180	103	2.1	.00	.00	.00	.00
27	.00	.00	130	170	211	180	99	1.6	.00	.00	.00	.00
28	.00	.00	139	170	214	170	99	1.0	.00	.00	.00	.00
29	.00	.00	148	175	---	160	96	.53	.00	.00	.00	.00
30	.00	.00	155	172	---	160	91	.30	.00	.00	.00	.00
31	.00	---	162	167	---	160	---	.23	---	.00	.00	---
TOTAL	.00	.00	1746.00	5280	4773	5946	3839	869.96	.21	.00	.00	.00
MEAN	.000	.000	56.3	170	170	192	128	28.1	.007	.000	.000	.000
MAX	.00	.00	162	180	214	220	160	84	.13	.00	.00	.00
MIN	.00	.00	.00	145	132	160	91	.23	.00	.00	.00	.00
AC-FT	.00	.00	3460	10470	9470	11790	7610	1730	.4	.00	.00	.00

CAL YR 1980	TOTAL	34947.46	MEAN 95.5	MAX 354	MIN .00	AC-FT	69320
WTR YR 1981	TOTAL	22454.17	MEAN 61.5	MAX 220	MIN .00	AC-FT	44540

11497500 SPRAGUE RIVER NEAR BEATTY, OR

LOCATION.--Lat 42°26'50", long 121°14'15", in NW¼SE¼ sec.13, T.36 S., R.12 E., Klamath County, Hydrologic Unit 18010202, on right bank 1.6 mi (2.6 km) east of Beatty, and 4.6 mi (7.4 km) upstream from Sycan River.

DRAINAGE AREA.--513 mi^2 (1,329 km^2).

PERIOD OF RECORD.--April to September 1912 and November 1912 to September 1913 (fragmentary), October 1913 to September 1915, February to November 1916, March 1917 to June 1918, May 1919 to October 1920, February 1921 to September 1926 (irrigation seasons only), October 1953 to current year. Monthly discharge only October 1913, published in WSP 1315-B. Prior to October 1917, published as "near Yainax."

REVISED RECORDS.--WSP 1315-B: 1917(M).

GAGE.--Water-stage recorder. Datum of gage is 4,305.35 ft (1,312.271 m) National Geodetic Vertical Datum of 1929. Apr. 19, 1912, to Feb. 19, 1914, nonrecording gage, Feb. 20, 1914, to Sept. 11, 1917, water-stage recorder, and Sept. 12, 1917, to Sept. 30, 1926, nonrecording gage, at site 2 mi (3 km) upstream at different datum.

REMARKS.--Records good. No regulation. Diversions for irrigation above station in the vicinity of Bly.

AVERAGE DISCHARGE.--31 years (water years 1914-15, 1920, 1954-81), 303 ft^3/s (8.581 m^3/s), 219,500 acre-ft/yr (271 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,980 ft^3/s (198 m^3/s) Dec. 23, 1964, gage height, 12.19 ft (3.716 m); minimum, 50 ft^3/s (1.42 m^3/s) Aug. 25, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,020 ft^3/s (28.9 m^3/s) Feb. 15, gage height, 5.77 ft (1.759 m); minimum, 50 ft^3/s (1.42 m^3/s) Aug. 25.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	138	134	165	135	210	340	520	190	133	106	63
2	117	139	154	157	150	207	368	520	186	127	102	63
3	117	138	284	154	148	199	332	486	198	126	101	65
4	112	138	289	162	142	204	292	439	190	134	102	62
5	109	138	230	161	151	212	278	396	162	144	102	63
6	110	137	191	157	150	206	287	373	163	148	102	63
7	117	145	148	149	137	212	289	353	162	160	102	71
8	116	172	125	149	139	214	281	324	176	154	99	72
9	114	156	140	147	146	203	275	313	226	160	93	72
10	114	150	142	149	142	196	266	294	182	162	85	72
11	114	146	150	144	154	195	261	274	179	147	83	68
12	117	141	141	138	159	196	254	247	207	142	80	73
13	132	129	131	138	183	197	250	226	196	142	79	78
14	151	128	131	138	535	204	261	230	188	147	83	82
15	200	128	138	140	840	217	290	250	172	147	75	97
16	192	126	144	142	398	220	315	263	160	142	72	93
17	175	133	144	148	621	222	341	243	151	141	73	93
18	159	130	143	148	459	212	358	254	145	137	65	84
19	147	131	141	145	363	218	412	306	136	135	64	74
20	147	134	143	146	522	263	475	274	128	133	59	71
21	153	136	155	152	366	240	500	252	123	135	59	71
22	151	145	190	178	308	219	503	236	121	133	61	89
23	147	151	188	174	278	220	514	234	126	130	62	84
24	141	149	169	171	264	212	573	243	131	124	62	82
25	139	139	186	167	256	252	611	299	131	122	55	90
26	143	140	247	151	237	771	629	306	122	125	55	97
27	147	137	238	170	225	796	587	277	126	124	54	115
28	143	140	230	222	213	466	531	250	123	124	56	168
29	145	146	199	228	---	383	498	224	132	116	57	145
30	136	143	184	196	---	470	498	211	138	107	57	126
31	140	---	174	162	---	380	---	202	---	109	58	---
TOTAL	4261	4203	5403	4948	7821	8616	11669	9319	4770	4210	2363	2546
MEAN	137	140	174	160	279	278	389	301	159	136	76.2	84.9
MAX	200	172	289	228	840	796	629	520	226	162	106	168
MIN	109	126	125	138	135	195	250	202	121	107	54	62
AC-FT	8450	8340	10720	9810	15510	17090	23150	18480	9460	8350	4690	5050

CAL YR 1980 TOTAL 111514 MEAN 305 MAX 1900 MIN 103 AC-FT 221200
WTR YR 1981 TOTAL 70129 MEAN 192 MAX 840 MIN 54 AC-FT 139100

11499100 SYCAN RIVER BELOW SNAKE CREEK, NEAR BEATTY, OR

LOCATION.--Lat 42°29'10", long 121°16'40", in SW¼SE¼ sec.34, T.35 S., R.12 E., Klamath County, Hydrologic Unit 18010202, on left bank 200 ft (61 m) downstream from Snake Creek and 3.1 mi (5.0 km) north of Beatty.

DRAINAGE AREA.--568 mi^2 (1,471 km^2).

PERIOD OF RECORD.--October 1973 to current year. Prior to October 1979, in reports of Oregon Water Resources Department.

GAGE.--Water-stage recorder. Altitude of gage is 4,310 ft (1,314 m), from topographic map.

REMARKS.--Records good except those for December to June, which are poor. Diversions for irrigation above station.

AVERAGE DISCHARGE.--8 years, 141 ft^3/s (3.993 m^3/s), 102,200 acre-ft/yr (126 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,990 ft^3/s (113 m^3/s) Jan. 16 or 17, 1974, gage height, 11.01 ft (3.356 m), from floodmarks; minimum, 3.0 ft^3/s (0.085 m^3/s) Nov. 21, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge not determined; maximum daily, 480 ft^3/s (13.6 m^3/s) Feb. 16; minimum recorded, 3.8 ft^3/s (0.11 m^3/s) Aug. 15, 16, Sept. 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	16	17	42	37	56	140	165	40	8.0	12	5.0
2	12	16	41	39	35	54	125	157	38	8.6	15	5.0
3	13	14	74	39	35	54	110	145	37	8.1	9.1	5.0
4	13	14	68	39	35	54	110	130	37	8.5	10	5.0
5	14	16	66	39	35	54	110	120	30	13	12	5.0
6	16	18	45	39	35	54	106	115	30	13	9.8	5.3
7	16	33	40	39	35	54	104	105	30	15	7.2	5.7
8	15	36	30	39	35	54	100	95	35	14	6.5	5.7
9	16	27	33	39	36	55	98	90	45	13	7.9	5.6
10	17	24	33	39	36	55	96	83	40	12	5.3	5.0
11	17	21	31	36	36	55	93	76	40	14	5.2	5.5
12	21	18	31	36	36	55	91	74	45	15	5.1	6.7
13	25	16	31	36	36	55	87	74	40	14	4.9	5.5
14	26	15	31	36	95	56	86	74	38	12	5.6	6.0
15	22	19	31	36	280	56	86	88	36	12	4.5	5.9
16	21	17	33	36	480	56	90	90	34	12	4.1	6.4
17	20	19	33	36	400	56	95	94	32	9.4	4.6	6.7
18	17	20	33	36	320	56	105	105	30	9.4	4.9	6.1
19	16	19	33	36	260	58	115	120	28	10	4.9	6.9
20	16	17	35	36	280	70	130	115	24	12	4.7	9.4
21	17	19	40	38	230	75	135	105	23	14	4.7	11
22	16	30	45	43	180	65	135	98	22	14	4.7	11
23	16	30	45	43	100	58	145	94	21	14	4.7	10
24	15	20	45	43	85	58	160	94	20	16	4.7	11
25	16	19	45	40	75	75	170	115	18	17	4.5	13
26	18	17	64	40	68	170	180	120	17	17	4.5	15
27	22	19	62	45	62	230	165	115	14	16	4.5	20
28	20	22	56	60	58	155	150	100	12	15	4.5	22
29	18	23	52	60	---	155	145	85	11	13	4.5	20
30	16	22	48	54	---	155	150	70	9.3	12	4.6	17
31	16	---	44	42	---	140	---	55	---	14	4.8	---
TOTAL	535	616	1315	1261	3435	2453	3612	3166	874.3	395.0	194.0	267.4
MEAN	17.3	20.5	42.4	40.7	123	79.1	120	102	29.1	12.7	6.26	8.91
MAX	26	36	74	60	480	230	180	165	45	17	15	22
MIN	12	14	17	36	35	54	86	55	9.3	8.0	4.1	5.0
AC-FT	1060	1220	2610	2500	6810	4870	7160	6280	1730	783	385	530

CAL YR 1980 TOTAL 47812.0 MEAN 131 MAX 1430 MIN 11 AC-FT 94840
WTR YR 1981 TOTAL 18123.7 MEAN 49.7 MAX 480 MIN 4.1 AC-FT 35950

NOTE.--No gage-height record Dec. 11 to June 19.

11501000 SPRAGUE RIVER NEAR CHILOQUIN, OR

LOCATION.--Lat 42°35'05", long 121°50'55", in NE¼NW¼ sec.35, T.34 S., R.7 E., Klamath County, Hydrologic Unit 18010202, on right bank 1.0 mi (1.6 km) northeast of Chiloquin, 4.6 mi (7.4 km) upstream from Modoc Point Canal intake, and at mile 5.4 (8.7 km).

DRAINAGE AREA.--1,580 mi² (4,090 km²), approximately.

PERIOD OF RECORD.--July to October 1920, March 1921 to current year. Monthly discharge only July 1920, published in WSP 1315-B. Prior to October 1931, published as "at McCready Ranch, near Chiloquin."

REVISED RECORDS.--WSP 591: 1922(M). WSP 1011: 1943 (M). WSP 1565: 1921-22.

GAGE.--Water-stage recorder. Datum of gage is 4,202.43 ft (1,280.901 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, nonrecording gage at site 12 mi (19 km) upstream at different datum.

REMARKS.--Records good except those for period of no gage-height record, which are fair. Minor regulation from irrigation diversions above station.

AVERAGE DISCHARGE.--60 years (water years 1922-81), 568 ft³/s (16.09 m³/s), 411,500 acre-ft/yr (507 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,900 ft³/s (422 m³/s) Dec. 26, 1964, gage height, 10.37 ft (3.161 m); minimum daily, 50 ft³/s (1.42 m³/s) May 26, 1926.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,280 ft³/s (36.2 m³/s) Feb. 19, gage height, 3.18 ft (0.969 m); minimum, 92 ft³/s (2.61 m³/s) July 28.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	234	320	340	449	402	551	740	820	358	167	117	115
2	233	320	360	418	353	521	707	773	339	178	115	117
3	230	320	370	397	300	521	642	746	325	170	106	120
4	226	320	390	377	300	533	599	733	306	174	106	124
5	226	320	420	368	300	515	580	700	306	174	103	131
6	230	320	450	377	300	504	539	681	306	170	110	141
7	226	330	430	373	300	504	515	668	292	159	106	138
8	230	330	350	363	300	492	510	674	292	159	117	134
9	226	330	310	353	296	492	510	661	287	170	112	138
10	230	340	370	348	292	492	504	611	283	186	110	141
11	243	340	380	339	301	487	492	568	287	178	112	148
12	251	335	380	334	310	470	470	510	306	156	109	148
13	256	330	370	329	329	454	459	476	301	152	110	145
14	265	330	360	329	392	438	454	449	306	152	112	141
15	274	325	350	329	521	438	449	428	310	156	115	145
16	292	325	345	325	800	438	444	418	296	152	117	152
17	310	320	335	334	1110	444	459	407	283	148	117	163
18	334	320	325	339	1220	449	481	423	260	138	117	170
19	325	325	329	339	1240	459	515	433	247	127	120	156
20	315	330	325	343	1230	454	533	433	230	120	124	148
21	306	330	329	343	1040	454	574	459	230	124	115	152
22	310	340	348	348	997	487	623	454	218	124	110	159
23	310	335	358	353	918	481	681	428	209	110	106	163
24	310	335	392	368	787	454	720	413	189	98	110	167
25	320	340	418	368	713	454	746	402	178	98	112	178
26	329	345	418	368	661	459	800	407	177	106	115	186
27	329	340	465	373	623	539	855	428	186	98	120	205
28	325	340	556	377	587	855	896	438	170	95	124	218
29	329	340	574	397	---	1050	918	413	163	103	124	222
30	320	340	551	433	---	939	882	382	163	115	117	238
31	320	---	487	433	---	753	---	368	---	115	110	---
TOTAL	8664	9915	12185	11324	16922	16581	18297	16204	7803	4372	3518	4703
MEAN	279	331	393	365	604	535	610	523	260	141	113	157
MAX	334	345	574	449	1240	1050	918	820	358	186	124	238
MIN	226	320	310	325	292	438	444	368	163	95	103	115
AC-FT	17190	19670	24170	22460	33560	32890	36290	32140	15480	8670	6980	9330

CAL YR 1980 TOTAL 205759 MEAN 562 MAX 3560 MIN 115 AC-FT 408100
WTR YR 1981 TOTAL 130488 MEAN 358 MAX 1240 MIN 95 AC-FT 258800

NOTE.--No gage-height record Oct. 29 to Dec. 18.

11502500 WILLIAMSON RIVER BELOW SPRAGUE RIVER, NEAR CHILOQUIN, OR

LOCATION.--Lat 42°34'15", long 121°52'35", in NE¼NE¼ sec.4, T.35 S., R.7 E., Klamath County, Hydrologic Unit 18010202, on right bank 0.2 mi (0.3 km) downstream from Sprague River and 0.8 mi (1.3 km) southwest of Chiloquin.

DRAINAGE AREA.--3,000 mi² (7,770 km²), approximately.

PERIOD OF RECORD.--June 1917 to current year.

REVISED RECORDS.--WSP 981: 1938(M). WSP 1565: 1920(M), 1927(M), 1938.

GAGE.--Water-stage recorder. Datum of gage is 4,155.55 ft (1,266.612 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1923, at different datum.

REMARKS.--Records good. Some regulation by diversion dams and logpond operations of Sprague River. Diversions for irrigation above station.

AVERAGE DISCHARGE.--64 years, 1,031 ft³/s (29.20 m³/s), 747,000 acre-ft/yr (921 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft³/s (456 m³/s) Dec. 26, 1964, gage height, 10.56 ft (3.219 m); minimum, 320 ft³/s (9.06 m³/s) Oct. 14, 1920.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,710 ft³/s (48.4 m³/s) Feb. 19, gage height, 3.73 ft (1.137 m); minimum, 372 ft³/s (10.5 m³/s) July 23, 24, 28, 29, Aug. 5, 7-13, 23.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	517	630	682	919	878	1120	1150	1160	622	399	390	385
2	517	622	714	894	847	1100	1130	1100	615	404	385	390
3	517	622	730	878	817	1090	1070	1060	580	404	381	395
4	511	622	772	863	824	1120	1040	1040	567	409	376	395
5	506	622	824	847	817	1100	1030	1010	554	414	376	404
6	506	622	847	878	817	1080	1000	994	554	409	376	409
7	500	652	809	894	817	1070	985	977	548	399	376	409
8	506	652	637	886	802	1060	977	960	548	399	381	409
9	506	652	601	870	794	1060	985	968	535	409	381	414
10	506	667	698	863	787	1060	977	927	530	424	376	409
11	523	667	714	855	817	1040	968	870	530	424	376	419
12	542	652	698	855	817	1020	943	817	548	414	381	419
13	542	644	682	847	824	1000	927	772	542	404	376	414
14	567	637	730	847	878	985	919	737	536	409	376	414
15	594	637	737	839	960	977	910	722	542	409	381	419
16	608	637	751	847	1210	977	894	698	530	414	385	424
17	622	630	744	855	1500	985	910	690	511	409	381	439
18	644	630	751	863	1540	985	919	706	494	404	385	449
19	644	630	765	855	1660	1000	943	730	482	399	385	439
20	630	637	772	847	1670	994	960	730	466	395	390	434
21	622	644	787	855	1500	985	994	751	460	395	385	444
22	615	675	802	847	1460	1010	1040	751	455	395	381	444
23	608	667	809	863	1420	1010	1080	730	444	385	376	460
24	615	667	847	870	1290	977	1100	706	434	381	376	460
25	630	675	847	863	1230	985	1140	690	419	376	381	477
26	622	675	847	878	1190	985	1190	690	414	385	381	488
27	622	667	902	886	1160	1050	1240	714	414	381	390	523
28	622	659	994	894	1130	1230	1250	722	409	376	390	530
29	615	659	1030	886	---	1450	1260	690	399	376	395	542
30	622	675	1010	919	---	1350	1230	659	399	385	395	554
31	622	---	960	910	---	1170	---	637	---	385	385	---
TOTAL	17823	19427	24493	26973	30556	33025	31161	25408	15082	12371	11849	13211
MEAN	575	648	790	870	1091	1065	1039	820	503	399	382	440
MAX	644	675	1030	919	1670	1450	1260	1160	622	424	395	554
MIN	500	622	601	839	787	977	894	637	399	376	376	385
AC-FT	35350	38530	48580	53500	60610	65510	61810	50400	29920	24540	23500	26200

CAL YR 1980 TOTAL 351092 MEAN 959 MAX 4000 MIN 444 AC-FT 696400
WTR YR 1981 TOTAL 261379 MEAN 716 MAX 1670 MIN 376 AC-FT 518400

11503000 ANNIE SPRING NEAR CRATER LAKE, OR

LOCATION.--Lat 42°52'20", long 122°10'00", unsurveyed, Klamath County, Hydrologic Unit 18010203, in Crater Lake National Park, at highway bridge 0.1 mi (0.2 km) downstream from source.

DRAINAGE AREA.--Indeterminate, normal flow is entirely from Annie Spring.

PERIOD OF RECORD.--June 1977 to current year. Discharge measurement and fragmentary gage-height record August to October 1913. Discharge measurements only Oct. 11, 1967, June 26, Sept. 13, 1968.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 5,982.65 ft (1,823.512 m) National Geodetic Vertical Datum of 1929 (National Park Service bench mark).

REMARKS.--Records good. Slight regulation by pumps 0.1 mi (0.2 km) upstream. Diversion for domestic use by National Park Service 0.1 mi (0.2 km) upstream.

COOPERATION.--Records of diversion by pumping furnished by National Park Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9.0 ft^3/s (0.25 m^3/s) June 12, 1978, gage height, 1.41 ft (0.430 m); minimum, 0.33 ft^3/s (0.009 m^3/s) Nov. 20, 22, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4.2 ft^3/s (0.12 m^3/s) June 2, gage height, 1.25 ft (0.381 m); minimum, 1.0 ft^3/s (0.028 m^3/s) Nov. 28 to Dec. 1, Dec. 14-20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	1.4	1.2	2.1	1.5	2.1	1.8	2.9	4.1	3.4	2.2	1.6
2	1.9	1.3	1.2	2.2	1.5	2.1	1.8	3.0	4.2	3.4	2.2	1.8
3	1.9	1.4	1.3	2.2	1.5	2.0	1.8	3.1	4.2	3.4	2.2	1.8
4	1.9	1.3	1.2	2.2	1.4	2.0	1.8	3.1	4.2	3.3	2.1	1.7
5	1.9	1.4	1.3	2.2	1.4	1.9	1.6	3.2	4.2	3.3	2.0	1.7
6	1.9	1.3	1.3	2.1	1.5	1.9	1.6	3.1	4.2	3.3	2.0	1.7
7	1.9	1.4	1.3	2.1	1.6	2.1	1.6	3.2	4.2	3.3	1.9	1.7
8	1.9	1.2	1.3	2.1	1.6	2.1	1.6	3.2	4.2	3.3	1.9	1.7
9	1.8	1.4	1.2	2.1	1.5	2.0	1.6	3.1	4.2	3.3	1.9	1.6
10	1.8	1.4	1.2	2.1	1.5	2.0	1.6	3.0	4.2	3.3	1.8	1.8
11	1.8	1.4	1.2	2.1	1.4	1.9	1.6	3.0	4.2	3.2	1.8	1.7
12	1.8	1.3	1.2	2.0	1.4	2.0	1.6	3.0	4.2	3.2	1.9	1.7
13	1.8	1.4	1.2	2.0	1.5	1.9	1.6	3.0	4.2	3.1	1.8	1.6
14	1.7	1.4	1.2	2.0	1.5	1.9	1.6	3.0	4.2	3.0	1.8	1.6
15	1.8	1.3	1.2	1.9	1.4	1.9	1.6	3.0	4.1	3.0	1.8	1.7
16	1.7	1.3	1.2	1.9	1.4	1.9	1.6	3.2	4.1	2.9	1.8	1.6
17	1.7	1.3	1.2	1.9	1.5	1.9	1.6	3.1	4.1	2.8	1.8	1.6
18	1.8	1.3	1.2	1.9	1.5	1.9	1.6	3.2	4.0	2.8	1.8	1.7
19	1.6	1.3	1.2	1.9	1.6	1.9	1.6	3.2	4.0	2.8	1.8	1.7
20	1.7	1.3	1.2	1.9	1.7	1.8	1.7	3.2	3.9	2.7	1.8	1.7
21	1.6	1.3	1.2	1.8	1.8	1.8	1.8	3.1	3.9	2.6	1.7	1.7
22	1.6	1.3	1.2	1.8	1.9	1.9	1.8	3.1	3.8	2.6	1.7	1.6
23	1.6	1.2	1.3	1.8	1.9	1.9	1.9	3.1	3.8	2.5	1.8	1.6
24	1.6	1.3	1.3	1.7	2.0	1.8	2.1	3.1	3.8	2.3	1.8	1.6
25	1.6	1.2	1.4	1.7	2.1	1.8	2.2	3.1	3.7	2.3	1.8	1.6
26	1.6	1.2	1.6	1.6	2.1	1.8	2.3	3.3	3.7	2.3	1.7	1.7
27	1.6	1.2	1.8	1.6	2.1	1.8	2.3	3.6	3.7	2.3	1.7	1.6
28	1.5	1.2	1.9	1.7	2.1	1.8	2.3	3.7	3.7	2.3	1.7	1.6
29	1.6	1.2	2.1	1.6	---	1.8	2.1	3.7	3.6	2.3	1.8	1.6
30	1.5	1.2	2.2	1.6	---	1.7	2.2	3.9	3.5	2.3	1.8	1.6
31	1.3	---	2.2	1.6	---	1.7	---	4.0	---	2.2	1.7	---
TOTAL	53.3	39.1	42.7	59.4	45.9	59.0	53.9	99.5	120.1	88.8	57.5	49.9
MEAN	1.72	1.30	1.38	1.92	1.64	1.90	1.80	3.21	4.00	2.86	1.85	1.66
MAX	1.9	1.4	2.2	2.2	2.1	2.1	2.3	4.0	4.2	3.4	2.2	1.8
MIN	1.3	1.2	1.2	1.6	1.4	1.7	1.6	2.9	3.5	2.2	1.7	1.6
AC-FT	106	78	85	118	91	117	107	197	238	176	114	99
MEAN†	1.76	1.37	1.41	1.97	1.70	1.95	1.81	3.24	4.12	3.06	2.05	1.78
AC-FT†	108	81.7	86.8	121	94.5	120	108	199	245	188	126	106

CAL YR 1980 TOTAL 952.3 MEAN 2.60 MAX 6.8 MIN 1.0 AC-FT 1890 MEAN† 2.67 AC-FT† 1937
WTR YR 1981 TOTAL 769.1 MEAN 2.11 MAX 4.2 MIN 1.2 AC-FT 1530 MEAN† 2.19 AC-FT† 1588

† Adjusted for diversion by pumping.

11507001 UPPER KLAMATH LAKE NEAR KLAMATH FALLS, OR

LOCATION.--Lat 42°15'00", long 121°48'55", in NW¼SW¼ sec.19, T.38 S., R.9 E., Klamath County, Hydrologic Unit 18010203, at southeast end of lake, 1.4 mi (2.3 km) upstream from outlet and 2.5 mi (4.0 km) northwest of Main Street Bridge at Klamath Falls.

DRAINAGE AREA.--3,810 mi² (9,870 km²), approximately, including 26.2 mi² (67.9 km²) in closed basin of Crater Lake.

PERIOD OF RECORD.--May 1904 to September 1923 (gage heights only), October 1923 to current year. Monthend contents only October 1923 to September 1927, published in WSP 1315-B.

GAGE.--Water-stage recorder. Datum of gage is 4,098.22 ft (1,249.137 m) National Geodetic Vertical Datum of 1929, or 4,100.00 ft (1,249.680 m) Bureau of Reclamation datum. Gage readings have been reduced to elevations Bureau of Reclamation datum. See WSP 1735 for history of changes prior to Nov. 10, 1923. Since Oct. 1, 1974, supplementary water-stage recorders at sites 7 mi (11 km) north and 21 mi (34 km) northwest at same datum (water-surface transfer by Pacific Power and Light Co.).

REMARKS.--Reservoir is formed by concrete dam at outlet of natural lake, completed in 1921, replacing a temporary dam built in 1919; controlled storage began Apr. 15, 1919. Capacity, 523,700 acre-ft (646 hm³) between elevations 4,136.0 ft (1,260.65 m) and 4,143.3 ft (1,262.88 m). Dead storage below elevation 4,136.0 ft (1,260.65 m) is 211,300 acre-ft (261 hm³). Stored water may be diverted through "A" Canal for irrigation on land under Klamath project of Bureau of Reclamation, or released to Link River through dam or powerplants at Klamath Falls. Contents given herein represent those above elevation 4,136.0 ft (1,260.65 m). Prior to Oct. 1,1973, contents given represented those above elevation 4,135.0 ft (1,260.35 m). Prior to Sept. 30, 1974, contents at end of month obtained by averaging elevations for last 3 days of month and first 3 days of following month to compensate for wind effect. Since Oct. 1, 1974, daily elevations are weighted mean of elevations at base and supplementary gages; contents at end of month are obtained from weighted midnight elevations of base and supplementary gages.

COOPERATION.--Capacity table furnished by Bureau of Reclamation, Klamath Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 4,144.98 ft (1,263.390 m) about Apr. 20, 1904, from high-water marks; minimum recorded, 4,135.55 ft (1,260.516 m) Oct. 30, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum daily elevation, 4,142.98 ft (1,262.780 m) May 2; minimum daily, 4,137.44 ft (1,261.092 m) Sept. 26.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

4,136	0	4,139	193,700	4,142	414,400
4,137	61,500	4,140	262,600	4,143	498,300
4,138	127,000	4,141	335,400	4,143.3	523,700

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4139.38	4139.31	4139.74	4140.60	4141.30	4142.42	4142.86	4142.96	4142.77	4141.62	4140.06	4138.32
2	4139.35	4139.35	4139.78	4140.62	4141.33	4142.44	4142.86	4142.98	4142.72	4141.57	4139.99	4138.29
3	4139.31	4139.36	4139.86	4140.64	4141.36	4142.44	4142.86	4142.94	4142.68	4141.50	4139.94	4138.22
4	4139.31	4139.36	4140.01	4140.67	4141.38	4142.52	4142.82	4142.95	4142.66	4141.44	4139.89	4138.15
5	4139.30	4139.36	4140.04	4140.69	4141.41	4142.55	4142.86	4142.94	4142.66	4141.39	4139.84	4138.12
6	4139.28	4139.35	4140.11	4140.72	4141.44	4142.53	4142.84	4142.93	4142.62	4141.38	4139.79	4138.09
7	4139.26	4139.37	4140.18	4140.70	4141.46	4142.54	4142.83	4142.91	4142.54	4141.33	4139.73	4138.04
8	4139.26	4139.43	4140.15	4140.73	4141.48	4142.56	4142.80	4142.89	4142.54	4141.29	4139.68	4138.01
9	4139.30	4139.45	4140.16	4140.76	4141.50	4142.59	4142.83	4142.90	4142.52	4141.24	4139.65	4137.98
10	4139.20	4139.49	4140.18	4140.79	4141.52	4142.62	4142.81	4142.91	4142.50	4141.20	4139.57	4137.94
11	4139.13	4139.48	4140.19	4140.80	4141.53	4142.63	4142.77	4142.88	4142.48	4141.15	4139.51	4137.91
12	4139.14	4139.50	4140.20	4140.82	4141.56	4142.62	4142.80	4142.85	4142.44	4141.10	4139.45	4137.87
13	4139.15	4139.50	4140.21	4140.84	4141.56	4142.65	4142.80	4142.82	4142.39	4141.04	4139.35	4137.85
14	4139.20	4139.51	4140.23	4140.84	4141.65	4142.63	4142.79	4142.80	4142.36	4140.99	4139.28	4137.83
15	4139.22	4139.52	4140.24	4140.86	4141.70	4142.61	4142.78	4142.77	4142.34	4140.93	4139.24	4137.80
16	4139.21	4139.52	4140.28	4140.88	4141.75	4142.69	4142.78	4142.74	4142.31	4140.89	4139.19	4137.76
17	4139.20	4139.52	4140.29	4140.87	4141.84	4142.69	4142.79	4142.69	4142.28	4140.84	4139.14	4137.72
18	4139.21	4139.54	4140.29	4140.91	4141.89	4142.69	4142.82	4142.70	4142.23	4140.79	4139.07	4137.68
19	4139.22	4139.54	4140.29	4140.91	4141.98	4142.73	4142.80	4142.76	4142.20	4140.75	4138.97	4137.68
20	4139.22	4139.55	4140.31	4140.93	4142.07	4142.73	4142.80	4142.78	4142.17	4140.70	4138.97	4137.63
21	4139.22	4139.53	4140.30	4140.90	4142.12	4142.72	4142.81	4142.77	4142.12	4140.65	4138.92	4137.60
22	4139.24	4139.61	4140.30	4140.90	4142.16	4142.77	4142.80	4142.76	4142.10	4140.60	4138.87	4137.56
23	4139.26	4139.65	4140.32	4141.02	4142.16	4142.79	4142.82	4142.76	4142.05	4140.54	4138.76	4137.54
24	4139.26	4139.67	4140.34	4141.05	4142.24	4142.78	4142.83	4142.77	4142.01	4140.49	4138.74	4137.49
25	4139.28	4139.68	4140.38	4141.04	4142.26	4142.82	4142.83	4142.79	4141.95	4140.45	4138.70	4137.48
26	4139.28	4139.71	4140.42	4141.04	4142.28	4142.89	4142.89	4142.82	4141.92	4140.38	4138.67	4137.44
27	4139.31	4139.73	4140.45	4141.10	4142.35	4142.89	4142.89	4142.80	4141.88	4140.32	4138.62	4137.45
28	4139.31	4139.69	4140.50	4141.14	4142.39	4142.84	4142.90	4142.80	4141.80	4140.27	4138.56	4137.52
29	4139.31	4139.68	4140.52	4141.24	---	4142.87	4142.92	4142.80	4141.73	4140.21	4138.49	4137.54
30	4139.32	4139.74	4140.55	4141.28	---	4142.86	4142.94	4142.82	4141.68	4140.17	4138.46	4137.55
31	4139.30	---	4140.58	4141.28	---	4142.84	---	4142.78	---	4140.12	4138.40	---
MEAN	4139.26	4139.52	4140.24	4140.89	4141.77	4142.68	4142.83	4142.83	4142.29	4140.88	4139.21	4137.80
MAX	4139.38	4139.74	4140.58	4141.28	4142.39	4142.89	4142.94	4142.98	4142.77	4141.62	4140.06	4138.32
MIN	4139.13	4139.31	4139.74	4140.60	4141.30	4142.42	4142.77	4142.69	4141.68	4140.12	4138.40	4137.44
(†)	215500	242300	305000	357600	447600	482100	492300	483800	386000	267600	148900	96000
(‡)	-9500	+26800	+62700	+52600	+90000	+34500	+10200	-8500	-97800	-118400	-118700	-52900

CAL YR 1980 MEAN 4141.32 MAX 4143.16 MIN 4139.13 AC-FT‡ +2900
WTR YR 1981 MEAN 4140.85 MAX 4142.98 MIN 4137.44 AC-FT‡ -129000

11507501 LINK RIVER AT KLAMATH FALLS, OR

LOCATION.--Lat 42°13'25", long 121°47'35", in SW¼NW¼ sec.32, T.38 S., R.9 E., Klamath County, Hydrologic Unit 18010204, on right bank 600 ft (183 m) upstream from outlet of Keno Canal and 0.4 mi (0.6 km) upstream from Main Street Bridge at Klamath Falls.

DRAINAGE AREA.--3,810 mi² (9,870 km²), approximately, including 26.2 mi² (67.9 km²) in closed basin of Crater Lake.

PERIOD OF RECORD.--May 1904 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,083.71 ft (1,244.715 m) National Geodetic Vertical Datum of 1929, or 4,085.50 ft (1,245.260 m) above mean sea level, datum of Bureau of Reclamation. Prior to Sept. 14, 1912, water-stage recorder or nonrecording gages at several sites within 0.5 mi (0.8 km) of present site at various datums. Sept. 14, 1912, to Nov. 23, 1923, at site 600 ft (183 m) downstream at datum 5.42 ft (1.652 m) lower. Nov. 24, 1923, to Nov. 15, 1961, at site on left bank at present datum.

REMARKS.--Records good. Flow regulated since 1919 by Upper Klamath Lake (see station 11507001). Large diurnal fluctuation caused by powerplant above station. Water diverted above station by main or "A" Canal of Klamath project (see station 11507200). Many other diversions above lake. All records presented herein include flow in Keno Canal which, since September 1908, has diverted from Upper Klamath Lake at Link River Dam for power generation, and returns flow to Link River below station.

AVERAGE DISCHARGE.--77 years, 1,579 ft³/s (44.72 m³/s), 1,144,000 acre-ft/yr (1.41 km³/yr), not adjusted for "A" Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,400 ft³/s (266 m³/s) May 12, 1904, gage height at Main Street Bridge, 7.30 ft (2.225 m), datum then in use, from floodmarks; minimum daily, 17 ft³/s (0.48 m³/s) Dec. 13, 1937.

EXTREMES FOR CURRENT YEAR.-- Maximum discharge, 2,680 ft³/s (75.9 m³/s) Apr. 20; minimum daily, 291 ft³/s (8.24 m³/s) Feb. 19.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	934	859	889	1070	474	982	2440	635	783	1430	1400	1690
2	968	974	885	998	515	1030	2300	916	961	1380	1270	1610
3	1020	1090	749	950	568	867	1950	926	833	1320	1280	1570
4	1020	1220	690	984	571	765	1670	905	947	1350	1270	1470
5	958	1240	706	975	573	762	1630	833	1300	1280	1270	1090
6	907	1320	793	903	671	746	1540	863	1240	777	1380	956
7	900	1270	811	911	699	795	1340	905	1090	714	1370	855
8	1030	1140	883	906	749	896	1430	843	876	698	1300	941
9	1040	1140	954	846	750	903	1380	803	789	686	1250	1130
10	1050	1200	1150	842	742	1030	1390	813	1220	730	1210	968
11	1150	945	1130	891	583	836	1330	863	1250	914	1260	805
12	961	943	1050	1020	698	748	1290	1150	1300	975	1380	874
13	959	998	1120	914	686	1050	1300	1320	1300	953	1340	948
14	919	1040	1130	884	536	1130	1290	1480	1090	897	1250	937
15	768	1070	1180	978	520	1100	1130	1310	1050	848	1250	937
16	754	1120	1110	927	357	1110	934	1180	1170	950	1240	958
17	838	1060	1220	889	330	1010	615	1100	1190	1320	1250	1030
18	871	1060	1200	889	386	918	729	846	1230	1320	1200	1100
19	926	1060	974	804	291	869	1540	667	1160	1210	1260	958
20	975	1040	1110	793	323	863	1850	559	983	1180	1200	905
21	1050	989	1170	781	535	926	900	503	1130	1150	1120	1010
22	924	934	1110	830	559	1110	974	480	1160	1040	1070	1050
23	932	884	1060	1080	519	1300	982	488	1150	1170	1050	969
24	929	934	1010	947	773	1140	874	386	1330	1180	1130	863
25	939	1060	1000	997	1020	1130	749	401	1490	1120	1170	707
26	886	1000	1000	1010	807	1550	719	472	1350	1170	1340	707
27	869	995	942	937	772	2180	719	464	1110	1250	1330	635
28	921	988	934	785	929	1830	719	495	1320	993	1320	511
29	938	1070	929	664	---	2200	726	543	1480	952	1340	472
30	853	978	944	544	---	2470	784	488	1400	993	1380	416
31	851	---	936	474	---	2470	---	671	---	1240	1600	---
TOTAL	29040	31621	30769	27423	16936	36716	37224	24308	34682	33190	39480	29072
MEAN	937	1054	993	885	605	1184	1241	784	1156	1071	1274	969
MAX	1150	1320	1220	1080	1020	2470	2440	1480	1490	1430	1600	1690
MIN	754	859	690	474	291	746	615	386	783	686	1050	416
AC-FT	57600	62720	61030	54390	33590	72830	73830	48210	68790	65830	78310	57660

CAL YR 1980 TOTAL 432896 MEAN 1183 MAX 3770 MIN 108 AC-FT 858600
WTR YR 1981 TOTAL 370461 MEAN 1015 MAX 2470 MIN 291 AC-FT 734800

11509500 KLAMATH RIVER AT KENO, OR

LOCATION.--Lat 42°08'00", long 121°57'40", in NW¼SE¼ sec.35, T.39 S., R.7 E., Klamath County, Hydrologic Unit 18010206, on left bank 1.7 mi (2.7 km) northwest of Keno and 4.5 mi (7.2 km) upstream from Spencer Creek.

DRAINAGE AREA.--3,920 mi² (10,200 km²), approximately (not including Lost River or Lower Klamath Lake basins).

PERIOD OR RECORD.--June 1904 to December 1913, October 1929 to current year. Monthly discharge only October to December 1929, published in WSP 1315-B.

GAGE.--Water-stage recorder. Datum of gage is 3,961 ft (1,207.3 m) National Geodetic Vertical Datum of 1929 (from river-profile survey). See WSP 1735 for history of changes prior to Nov. 6, 1954.

REMARKS.--Records good. Flow regulated since 1919 by Upper Klamath Lake (see station 11507001). Diversions for irrigation above station.

AVERAGE DISCHARGE.--61 years, 1,658 ft³/s (46.95 m³/s), 1,201,000 acre-ft/yr (1.48 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft³/s (286 m³/s) Mar. 5, 1972, gage height, 12.73 ft (3.880 m); minimum, 26 ft³/s (0.74 m³/s) Sept. 23, 1956; minimum daily, 60 ft³/s (1.70 m³/s) May 19, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 15.3 ft (4.66 m), from floodmark (original datum), about May 10, 1904, discharge, 9,250 ft³/s (262 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,020 ft³/s (85.53 m³/s) Apr. 17, gage height, 7.96 ft (2.426 m); minimum, 239 ft³/s (6.77 m³/s) July 6; minimum daily, 247 ft³/s (6.99 m³/s) July 8.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	987	992	891	1000	901	1240	2450	676	512	492	718	1010
2	992	992	891	1010	896	1240	2290	635	512	492	723	1010
3	998	992	896	1010	896	1240	1890	635	591	496	723	1010
4	998	992	896	1000	896	1240	1630	640	658	500	723	944
5	998	992	886	1000	896	1240	1630	640	713	504	718	600
6	998	992	886	1000	896	1240	1330	640	756	262	723	544
7	992	998	886	1000	896	1240	901	640	756	249	718	544
8	992	998	949	1000	896	1240	917	640	574	247	718	540
9	992	998	1040	1000	896	1240	917	631	426	252	728	473
10	992	998	1100	1000	901	1240	917	631	423	252	723	426
11	992	992	1110	1000	965	1240	917	671	423	249	723	426
12	992	992	1110	1000	1000	1240	917	713	423	252	728	496
13	992	992	1100	1000	1000	1240	907	713	426	252	742	540
14	998	998	1100	1000	1010	1250	907	718	426	252	723	540
15	992	992	1100	1000	1010	1250	800	718	423	249	723	540
16	992	992	1100	1000	1120	1250	713	718	423	252	723	540
17	992	992	1100	1000	1040	1250	1850	718	426	462	723	540
18	992	992	1100	1000	896	1240	1650	723	426	473	635	540
19	992	992	1100	1000	891	1240	604	676	426	473	718	544
20	992	954	1100	1000	917	1240	553	635	426	473	718	540
21	992	891	1100	998	981	1240	820	635	426	473	713	540
22	998	891	1100	992	1010	1240	820	635	426	473	713	540
23	992	891	1060	998	1050	1240	776	635	426	473	709	536
24	992	891	1010	998	1120	1240	728	635	423	473	709	532
25	998	891	1010	1000	1180	1240	728	635	426	473	709	532
26	998	891	1010	965	1240	1690	723	635	426	473	709	532
27	998	891	1010	901	1240	2440	723	635	426	473	713	536
28	992	886	1010	860	1240	2530	718	635	423	473	709	532
29	992	886	1010	805	---	2640	723	574	455	473	709	536
30	998	891	1010	810	---	2540	723	512	489	473	713	532
31	998	---	1000	901	---	2450	---	512	---	582	845	---
TOTAL	30813	28732	31671	30248	27880	45330	32172	20089	14515	12445	22522	17695
MEAN	994	958	1022	976	996	1462	1072	648	484	401	720	590
MAX	998	998	1110	1010	1240	2640	2450	723	756	582	845	1010
MIN	987	886	886	805	891	1240	553	512	423	247	635	426
AC-FT	61120	56990	62820	60000	55300	89910	63810	39850	28790	24680	44230	35100

CAL YR 1980 TOTAL 465853 MEAN 1273 MAX 4650 MIN 247 AC-FT 924000
WTR YR 1981 TOTAL 313912 MEAN 860 MAX 2640 MIN 247 AC-FT 622600

11510700 KLAMATH RIVER BELOW JOHN C. BOYLE POWERPLANT, NEAR KENO, OR

LOCATION.--Lat 42°05'05", long 122°04'20", in SE¼SE¼ sec.14, T.40 S., R.6 E., Klamath County, Hydrologic Unit 18010206, on right bank 0.7 mi (1.1 km) downstream from John C. Boyle powerplant, 8 mi (13 km) downstream from Spencer Creek, and 8.5 mi (13.7 km) southwest of Keno.

DRAINAGE AREA.--4,080 mi² (10,570 km²), approximately (not including Lost River or Lower Klamath Lake basins).

PERIOD OF RECORD.-- January 1959 to current year. Prior to Oct. 1, 1961, published as "below Big Bend powerplant."

GAGE.--Water-stage recorder. Datum of gage is 3,274.82 ft (998.165 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Power & Light Co.).

REMARKS.--Records excellent. Flow regulated by Upper Klamath Lake (see station 11507001). Large diurnal fluctuation caused by John C. Boyle powerplant and 2 powerplants below Upper Klamath Lake. Diversions for irrigation above station.

AVERAGE DISCHARGE.--22 years, 1,799 ft³/s (50.95 m³/s), 1,303,000 acre-ft/yr (1.61 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s (312 m³/s) Mar. 5, 1972, gage height, 9.33 ft (2.844 m); minimum, 283 ft³/s (8.01 m³/s) Feb. 17, 1968; minimum daily, 317 ft³/s (8.98 m³/s) July 25, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,850 ft³/s (80.7 m³/s) Mar. 30, gage height, 5.78 ft (1.762 m); minimum, 326 ft³/s (9.23 m³/s) Jan. 30 to Feb. 1; minimum daily, 344 ft³/s (9.74 m³/s) July 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1230	1190	1130	1210	1040	1450	2600	947	760	822	860	1230
2	1220	1200	1110	1200	1000	1440	2520	853	760	719	809	1220
3	1150	1190	1140	1180	1110	1600	1970	853	760	719	996	1230
4	1210	1200	1150	1200	1100	1200	1770	906	940	719	989	1170
5	1210	1190	1130	1180	1110	1440	1770	906	996	695	996	841
6	1210	1200	1150	1200	1110	1440	1730	906	989	866	989	736
7	1200	1190	1180	1190	1120	1440	1180	913	996	347	947	742
8	1210	1200	1150	1200	1130	1440	1120	899	892	351	853	784
9	1210	1190	1200	1180	1110	1440	1120	815	626	351	853	724
10	1200	1200	1230	1200	1120	1440	1150	809	626	344	989	626
11	1200	1190	1230	1200	1120	1440	1150	899	621	452	996	667
12	1210	1200	1230	1180	1200	1440	1150	1000	626	448	961	766
13	1200	1180	1230	1200	1190	1440	1170	989	760	473	985	760
14	1200	1200	1250	1180	1200	1440	1160	954	662	439	985	760
15	1200	1190	1210	1180	1330	1440	1170	906	621	486	853	803
16	1200	1200	1410	1200	1330	1440	982	947	626	695	828	803
17	1210	1090	1210	1180	1500	1440	1660	899	667	766	1210	809
18	1190	1200	1460	1200	1320	1440	2150	996	713	631	585	853
19	1190	1190	1430	1180	1180	1440	778	954	713	631	1120	713
20	1200	1200	1200	1200	1160	1440	853	899	621	719	982	719
21	1200	1090	1210	1190	1210	1440	1080	906	621	719	989	803
22	1190	1110	1200	1200	1250	1440	1090	899	673	760	847	809
23	1200	1100	1380	1190	1260	1440	996	860	667	766	853	809
24	1190	1110	1180	1200	1390	1440	982	803	673	713	982	803
25	1200	1090	1200	1190	1440	1440	947	809	673	673	989	809
26	1180	1110	1200	1200	1440	1820	940	940	719	673	982	713
27	1200	1090	1190	1190	1420	2510	989	947	580	760	940	719
28	1190	1110	1200	1120	1460	2740	982	954	580	790	940	809
29	1200	1090	1230	1040	---	2740	996	809	719	719	853	803
30	1190	1110	1430	1030	---	2800	996	667	809	860	853	809
31	1200	---	1200	996	---	2720	---	673	---	760	1080	---
TOTAL	37190	34800	38050	36386	34350	51260	39151	27517	21689	19866	29094	24842
MEAN	1200	1160	1227	1174	1227	1654	1305	888	723	641	939	828
MAX	1230	1200	1460	1210	1500	2800	2600	1000	996	866	1210	1230
MIN	1150	1090	1110	996	1000	1200	778	667	580	344	585	626
AC-FT	73770	69030	75470	72170	68130	101700	77660	54580	43020	39400	57710	49270

CAL YR 1980 TOTAL 539554 MEAN 1474 MAX 4500 MIN 333 AC-FT 1070000
WTR YR 1981 TOTAL 394195 MEAN 1080 MAX 2800 MIN 344 AC-FT 781900

11516530 KLAMATH RIVER BELOW IRON GATE DAM, CA

LOCATION.--Lat 41°55'41", long 122°26'35", in SE¼NE¼ sec.17, T.47 N., R.5 W., Siskiyou County, Hydrologic Unit 18010206, on left bank 0.1 mi (0.2 km) downstream from Bogus Creek, 0.6 mi (1.0 km) downstream from Iron Gate Dam, and 5.9 mi (9.5 km) northeast of Hornbrook.

DRAINAGE AREA.--4,630 mi² (11,990 km²), approximately (not including Lost River and Lower Klamath Lake basins).

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

GAGE.--Water-stage recorder. Datum of gage is 2,162.44 ft (659.112 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Power and Light Co.).

REMARKS.--Records excellent. Flow regulated by Upper Klamath Lake (see station 11507001), other smaller reservoirs, and diversions above station. Iron Gate Dam 0.6 mi (1.0 km) upstream is a re-regulating reservoir. Records of chemical analyses and water temperatures for the current year are published in the California district report.

AVERAGE DISCHARGE.--21 years, 2,149 ft³/s (60.86 m³/s), 1,557,000 acre-ft/yr (1.92 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft³/s (833 m³/s) Dec. 22, 1964, gage height, 13.63 ft (4.154 m), from rating curve extended above 15,000 ft³/s (425 m³/s), on basis of slope-area measurement of maximum flow; minimum daily, 647 ft³/s (18.3 m³/s) Oct. 30, Nov. 6, 1960, Sept. 24, Oct. 1, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,120 ft³/s (88.4 m³/s) Mar. 31, gage height, 5.28 ft (1.609 m); minimum daily, 723 ft³/s (20.5 m³/s) June 25.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1350	1340	1340	1490	1340	1780	2930	1040	756	734	1030	1370
2	1350	1340	1400	1490	1340	1720	2840	1030	741	736	1030	1370
3	1350	1340	1380	1490	1340	1660	2430	1020	742	740	1030	1370
4	1350	1340	1370	1490	1340	1690	2170	1020	743	745	1030	1280
5	1340	1340	1360	1420	1340	1670	2140	1020	744	737	1030	879
6	1340	1340	1350	1340	1340	1670	1980	1020	749	738	1030	876
7	1340	1340	1350	1340	1340	1660	1380	1020	817	745	1030	874
8	1340	1340	1490	1340	1340	1660	1330	1030	917	744	1030	862
9	1340	1340	1560	1340	1340	1660	1330	1030	767	743	1030	853
10	1340	1340	1510	1340	1340	1660	1330	1030	757	740	1030	852
11	1340	1350	1510	1340	1340	1650	1330	1020	755	740	1030	851
12	1350	1350	1510	1340	1340	1630	1330	1020	755	739	1030	851
13	1340	1350	1510	1340	1350	1640	1330	1020	759	738	1030	841
14	1360	1340	1510	1340	1400	1630	1330	1030	755	736	1030	846
15	1340	1340	1510	1340	1470	1630	1320	1030	748	733	1030	848
16	1340	1340	1510	1340	1460	1630	1320	1030	748	732	1030	848
17	1340	1340	1510	1340	1660	1630	1320	1030	738	731	1030	845
18	1340	1340	1510	1340	1800	1630	1320	1040	746	730	1030	846
19	1340	1340	1520	1340	1810	1630	1330	1050	745	731	1030	847
20	1340	1340	1520	1350	1800	1640	1330	1040	744	733	1040	847
21	1340	1340	1520	1340	1800	1640	1330	1040	735	733	1040	846
22	1340	1360	1520	1340	1790	1640	1320	1040	740	735	1040	844
23	1340	1350	1470	1340	1790	1640	1320	1040	735	735	1040	842
24	1340	1350	1390	1340	1790	1640	1320	1040	735	735	1040	847
25	1340	1350	1390	1340	1790	1640	1330	1040	723	734	1040	849
26	1340	1340	1430	1340	1790	1700	1350	1040	725	735	1040	835
27	1340	1340	1500	1350	1790	1800	1330	1040	727	733	1050	841
28	1340	1340	1500	1360	1790	2450	1320	1040	729	735	1050	837
29	1340	1340	1500	1350	---	2930	1320	1040	729	733	1040	836
30	1340	1340	1490	1350	---	3010	1320	1040	730	735	1050	836
31	1340	---	1490	1340	---	3080	---	1040	---	741	1040	---
TOTAL	41610	40280	45430	42280	43160	56340	46380	32010	22528	22817	32020	27490
MEAN	1342	1343	1465	1364	1541	1817	1546	1033	751	736	1033	916
MAX	1360	1360	1560	1490	1810	3080	2930	1050	917	745	1040	1370
MIN	1340	1340	1340	1340	1340	1630	1320	1020	723	730	1030	835
AC-FT	82530	79900	90110	83860	85610	111800	91990	63490	44680	45260	63510	54530

CAL YR 1980 TOTAL 658153 MEAN 1798 MAX 7120 MIN 725 AC-FT 1305000
WTR YR 1981 TOTAL 452345 MEAN 1239 MAX 3080 MIN 723 AC-FT 897200

12472800 COLUMBIA RIVER BELOW PRIEST RAPIDS DAM, WA

LOCATION.--Lat 46°37'44", long 119°51'49", in SE¼NW¼ sec.7, T.13 N., R.24 E., Grant County, Hydrologic Unit 17020016, on left bank 2.6 mi (4.2 km) downstream from Priest Rapids Dam, 14.7 mi (23.7 km) south of Beverly, and at mile 394.5 (634.8 km).

DRAINAGE AREA.--96,000 mi² (249,000 km²), approximately.

PERIOD OF RECORD.--January 1917 to current year. January 1917 to September 1930, at site 3.4 mi (5.5 km) downstream, published as "at Vernita." October 1930 to July 27, 1959, at site 46.5 mi (74.8 km) upstream, published as "at Trinidad."

REVISED RECORDS.--WSP 1933: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1930, nonrecording gages at site 3.4 mi (5.5 km) downstream at datum 388.7 ft (118.43 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1930, to July 27, 1959, water-stage recorder at site 46.5 mi (74.8 km) upstream at datum 499.3 ft (152.19 m) National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Records excellent. Diversions for irrigation of about 500,000 acres (2,020 km²) above station. Flow regulated by 10 major reservoirs and numerous smaller reservoirs and powerplants. Records of water temperatures for the current year are published in the Washington district report.

AVERAGE DISCHARGE.--64 years, 119,800 ft³/s (3,393 m³/s), 86,800,000 acre-ft/yr (107,000 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 692,600 ft³/s (19,600 m³/s) June 12, 1948, gage height, 59.35 ft (18.090 m), site and datum then in use; minimum, 4,120 ft³/s (117 m³/s) Feb. 10, 1932, gage height, 11.40 ft (3.475 m) site and datum then in use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 7, 1894, reached a discharge of about 740,000 ft³/s (21,000 m³/s), based on information obtained at other points.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 316,000 ft³/s (8,950 m³/s) June 5, elevation, 417.97 ft (127.397 m); minimum, 36,100 ft³/s (1,020 m³/s) Oct. 4, elevation, 396.35 ft (120.807 m).

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84100	56800	110000	166000	126000	81700	112000	127000	232000	165000	189000	123000
2	76200	51600	118000	160000	157000	118000	129000	121000	256000	187000	158000	101000
3	65600	70500	108000	153000	155000	111000	119000	122000	258000	184000	152000	96200
4	51500	74000	128000	156000	164000	120000	100000	129000	235000	191000	186000	85700
5	51800	75000	117000	152000	147000	117000	90800	136000	281000	188000	175000	54800
6	55700	95300	103000	135000	158000	119000	106000	149000	268000	197000	155000	59800
7	75500	81500	98700	139000	149000	113000	107000	155000	253000	234000	157000	65000
8	74300	69900	122000	153000	157000	99700	112000	146000	250000	253000	156000	96400
9	75200	69000	121000	153000	151000	114000	118000	116000	248000	223000	152000	82900
10	82800	90600	118000	156000	166000	112000	112000	109000	245000	214000	148000	85700
11	66500	107000	119000	148000	157000	110000	120000	154000	245000	201000	165000	96600
12	47500	95100	116000	161000	155000	117000	101000	145000	248000	178000	166000	79700
13	71100	101000	110000	162000	139000	113000	104000	148000	256000	181000	155000	70700
14	83200	91900	96700	162000	118000	88400	108000	154000	242000	181000	171000	91400
15	76500	94400	116000	161000	104000	88500	117000	160000	249000	180000	140000	96700
16	89300	86100	109000	157000	108000	113000	108000	123000	238000	195000	131000	96800
17	77100	91900	116000	163000	84500	109000	101000	114000	218000	175000	137000	93400
18	58900	97600	116000	151000	107000	112000	94500	143000	221000	200000	139000	99400
19	48000	79500	124000	145000	130000	111000	74200	152000	223000	182000	138000	75400
20	71600	102000	106000	168000	132000	104000	103000	157000	228000	191000	134000	63500
21	83900	104000	60200	161000	113000	103000	96300	160000	233000	187000	128000	87400
22	87500	98900	85700	141000	114000	90700	94900	154000	240000	194000	135000	88200
23	84700	85500	124000	155000	124000	108000	85400	127000	242000	185000	109000	81100
24	78800	118000	111000	146000	136000	120000	76700	114000	244000	170000	114000	91300
25	56700	114000	84600	132000	126000	111000	63500	130000	243000	146000	126000	89200
26	61700	93300	121000	159000	118000	104000	53400	140000	247000	160000	120000	72300
27	82800	68500	136000	161000	108000	108000	72000	154000	224000	169000	109000	53600
28	80700	74300	152000	153000	88900	90400	80000	172000	216000	178000	120000	75100
29	80400	78300	170000	150000	---	77700	105000	192000	216000	173000	105000	90600
30	79900	80300	184000	144000	---	113000	117000	238000	180000	196000	109000	83600
31	72000	---	169000	145000	---	100000	---	233000	---	183000	113000	---
TOTAL	2231500	2595800	3669900	4748000	3702400	3297100	2980700	4574000	7179000	5839000	4392000	2526500
MEAN	71980	86530	118400	153200	132200	106400	99360	147500	239300	188400	141700	84220
MAX	89300	118000	184000	168000	166000	120000	129000	238000	281000	253000	189000	123000
MIN	47500	51600	60200	132000	84500	77700	53400	109000	180000	146000	105000	53600
AC-FT	4426000	5149000	7279000	9418000	7344000	6540000	5912000	9073000	14240000	11580000	8712000	5011000

CAL YR 1980 TOTAL 37725600 MEAN 103100 MAX 208000 MIN 42900 AC-FT 74850000
WTR YR 1981 TOTAL 47735900 MEAN 130800 MAX 281000 MIN 47500 AC-FT 94680000

13181000 OWYHEE RIVER NEAR ROME, OR

LOCATION.--Lat 42°52'02", long 117°38'52", in SE¼NE¼ sec.14, T.31 S., R.41 E., Malheur County, Hydrologic Unit 17050107, on right bank 0.5 mi (0.8 km) downstream from Jordan Creek, 2.6 mi (4.2 km) north of Rome, and at mile 122.4 (186.9 km).

DRAINAGE AREA.--About 8,000 mi² (20,700 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 3,344.20 ft (1,019.312 m) National Geodetic Vertical Datum of 1929. Prior to Feb 10, 1960, at datum 0.24 ft (0.073 m) lower.

REMARKS.--Records excellent. Flow regulated by Antelope Reservoir, capacity, 70,000 acre-ft (86.3 hm³), increased in 1970, and Wild Horse Reservoir, capacity, 32,690 acre-ft (40.3 hm³), and numerous small reservoirs. Diversions above station for irrigation.

AVERAGE DISCHARGE.--32 years, 895 ft³/s (25.35 m³/s), 648,400 acre-ft/yr (799 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,500 ft³/s (949 m³/) Dec. 24, 1964, gage height, 16.7 ft (5.09 m), from floodmark; minimum, 42 ft³/s (1.19 m³/s) Aug. 12, 1954, July 28, Aug. 5, 1961, July 31, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 5,400 ft³/s (153 m³/s) and maximum discharge, 6,060 ft³/s (172 m³/s) Apr. 21, gage height, 7.82 ft (2.384 m); minimum, 80 ft³/s (2.27 m³/s) Sept. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	185	192	155	345	252	363	783	625	801	193	144	85
2	182	185	175	303	211	344	742	564	745	194	141	83
3	181	186	190	273	196	330	658	546	693	186	135	83
4	182	183	210	274	193	322	667	513	636	182	138	83
5	182	179	180	285	190	318	660	480	576	177	135	85
6	176	179	165	306	190	313	580	481	524	182	135	85
7	169	177	150	296	200	303	531	443	461	170	126	88
8	166	177	140	272	200	296	496	420	401	161	126	91
9	162	178	135	240	190	287	465	389	366	162	144	94
10	154	182	135	210	190	283	449	364	365	162	144	91
11	154	183	135	190	190	279	430	331	369	151	135	91
12	155	187	135	190	190	274	413	290	347	135	129	91
13	157	186	135	190	200	269	390	267	338	121	126	91
14	155	178	135	190	236	263	378	256	351	114	117	88
15	154	183	135	180	344	259	365	263	342	112	114	85
16	160	174	150	185	2090	260	365	273	333	113	111	83
17	164	183	150	195	1470	263	365	269	325	109	105	83
18	169	168	145	200	1670	259	362	318	308	110	100	85
19	178	167	145	200	1240	255	383	339	307	108	100	88
20	184	172	145	200	884	296	826	369	287	111	100	88
21	208	172	170	210	720	376	3840	486	259	128	97	88
22	197	170	242	220	607	534	3150	790	255	136	97	88
23	188	170	238	240	531	739	1950	907	253	134	100	91
24	182	170	248	256	493	898	1340	802	248	138	94	91
25	180	150	266	263	457	942	1040	1000	243	135	97	97
26	183	135	318	266	481	899	876	1060	230	135	97	100
27	183	135	475	256	425	1140	860	985	215	135	97	105
28	188	150	716	267	389	1170	812	1260	201	135	91	115
29	193	155	529	255	---	1300	757	1050	195	141	91	120
30	193	165	471	238	---	1280	691	896	192	141	91	123
31	191	---	406	256	---	923	---	856	---	141	91	---
TOTAL	5455	5171	7124	7451	14629	16037	25624	17892	11176	4452	3548	2759
MEAN	176	172	230	240	522	517	854	577	373	144	114	92.0
MAX	208	192	716	345	2090	1300	3840	1260	801	194	144	123
MIN	154	135	135	180	190	255	362	256	192	108	91	83
AC-FT	10820	10260	14130	14780	29020	31810	50830	35490	22170	8830	7040	5470

CAL YR 1980 TOTAL 312514 MEAN 854 MAX 9000 MIN 135 AC-FT 619900
WTR YR 1981 TOTAL 121318 MEAN 332 MAX 3840 MIN 83 AC-FT 240600

13182500 LAKE OWYHEE NEAR NYSSA, OR

LOCATION.--Lat 43°38'30", long 117°14'30", in NW¼SE¼ sec.20, T.22 S., R.45 E., Malheur County, Hydrologic Unit 17050110, near left abutment on Owyhee Dam on Owyhee River, 21 mi (33.8 km) southwest of Nyssa, and at mile 28.5 (45.9 km).

DRAINAGE AREA.--11,160 mi² (28,900 km²), approximately.

PERIOD OF RECORD.--October 1932 to current year (month-end contents and change in contents only prior to October 1979). Prior to October 1958, published as Owyhee Reservoir at Owyhee Dam, near Nyssa.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Oct. 1, 1965, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete arch-gravity dam, completed in September 1932; storage began Oct. 16, 1932. Capacity, 1,122,000 acre-ft (1,380 hm³) between elevations 2,567.50 ft (721.614 m) bottom of sluice gates and 2,670.00 ft (813.816 m) top of spillway gate, 715,000 acre-ft (882 hm³) between elevations 2,590.20 ft (789.493 m) diversion tunnel and 2,670.00 ft (813.816 m). Dead storage below elevation 2,567.50 ft (721.614 m) negligible. Figures given herein are contents above elevation 2,367.50 ft (721.614 m). Reservoir generally will not be drawn below elevation 2,590.2 ft (789.493 m), contents, 406,800 acre-ft (502 hm³), which project considers dead storage. Water is released through diversion tunnel to South Canal for irrigation of lands west of Snake River in vicinity of Homedale, Idaho, and to North Canal for irrigation of lands north and west of Owyhee River and through sluice gates to river for Owyhee Canal, which diverts about 18 mi (29 km) downstream.

COOPERATION.--Capacity tables furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 1,140,000 acre-ft (1,410 hm³) Apr. 15, 1952, elevation, 2,671.50 ft (814.273 m); minimum observed since full capacity was attained on May 7, 1936, 437,000 acre-ft (539 hm³) Oct. 1, 1961, elevation, 2,595.35 ft (791.063 m).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 1,042,000 acre-ft (1,280 hm³) Apr. 28, 29; maximum elevation, 2,663.62 ft (811.871 m) Apr. 30, affected by wind; minimum contents, 682,400 acre-ft (841 hm³) Sept. 30, elevation, 2,628.46 ft (801.155 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

2,590	405,700	2,640	787,300
2,600	466,300	2,650	888,300
2,610	535,400	2,660	999,700
2,620	611,900	2,670	1,122,000
2,630	695,800	2,671	1,135,000

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2649.85	2648.21	2649.81	2651.99	2654.06	2657.58	2661.17	2663.47	2659.69	2653.85	2644.81	2635.15
2	2649.80	2648.24	2649.99	2652.05	2654.08	2657.69	2661.33	2663.42	2659.62	2653.62	2644.51	2634.89
3	2649.71	2648.30	2650.01	2652.14	2654.17	2657.78	2661.46	2663.35	2659.47	2653.35	2644.19	2634.60
4	2649.62	2648.35	2649.99	2652.19	2654.24	2657.87	2661.58	2663.21	2659.30	2653.06	2643.87	2634.26
5	2649.53	2648.37	2650.12	2652.28	2654.28	2657.92	2661.71	2663.08	2659.17	2652.78	2643.56	2633.97
6	2649.44	2648.47	2650.15	2652.35	2654.35	2658.01	2661.80	2662.94	2659.01	2652.51	2643.32	2633.73
7	2649.35	2648.58	2650.21	2652.44	2654.40	2658.08	2661.87	2662.78	2658.85	2652.26	2643.05	2633.48
8	2649.19	2648.62	2650.31	2652.49	2654.47	2658.14	2661.92	2662.62	2658.69	2651.94	2642.76	2633.26
9	2649.08	2648.65	2650.31	2652.58	2654.51	2658.24	2661.97	2662.44	2658.51	2651.69	2642.45	2632.96
10	2648.96	2648.69	2650.39	2652.62	2654.53	2658.28	2662.03	2662.22	2658.35	2651.39	2642.19	2632.74
11	2648.85	2648.74	2650.46	2652.69	2654.58	2658.35	2662.06	2662.03	2658.19	2651.14	2641.87	2632.52
12	2648.74	2648.80	2650.49	2652.76	2654.65	2658.44	2662.10	2661.83	2658.05	2650.85	2641.55	2632.29
13	2648.62	2648.85	2650.53	2652.78	2654.78	2658.49	2662.12	2661.60	2657.92	2650.56	2641.24	2632.02
14	2648.55	2648.90	2650.55	2652.85	2654.99	2658.56	2662.12	2661.40	2657.78	2650.26	2640.94	2631.76
15	2648.37	2648.94	2650.62	2652.90	2655.15	2658.69	2662.12	2661.17	2657.62	2649.96	2640.62	2631.53
16	2648.33	2648.96	2650.69	2653.01	2655.44	2658.74	2662.10	2660.96	2657.47	2649.67	2640.28	2631.29
17	2648.31	2649.05	2650.72	2653.08	2655.81	2658.76	2662.06	2660.74	2657.30	2649.40	2639.96	2631.04
18	2648.22	2649.10	2650.76	2653.12	2656.14	2658.87	2662.01	2660.53	2657.12	2649.10	2639.62	2630.82
19	2648.19	2649.17	2650.76	2653.22	2656.44	2658.92	2662.06	2660.40	2656.96	2648.80	2639.28	2630.55
20	2648.14	2649.21	2650.87	2653.28	2656.62	2659.10	2662.06	2660.28	2656.74	2648.51	2638.97	2630.30
21	2648.08	2649.30	2650.99	2653.33	2656.78	2659.15	2662.24	2660.17	2656.51	2648.19	2638.62	2630.06
22	2648.06	2649.31	2650.96	2653.39	2656.94	2659.21	2662.81	2660.06	2656.26	2647.92	2638.39	2629.81
23	2648.00	2649.42	2651.08	2653.46	2657.03	2659.28	2663.19	2660.03	2656.03	2647.62	2638.06	2629.63
24	2647.96	2649.46	2651.21	2653.49	2657.12	2659.42	2663.31	2660.03	2655.76	2647.28	2637.74	2629.45
25	2647.96	2649.51	2651.31	2653.58	2657.22	2659.67	2663.40	2659.99	2655.51	2646.96	2637.44	2629.23
26	2647.94	2649.49	2651.37	2653.65	2657.33	2659.90	2663.49	2659.99	2655.21	2646.67	2637.10	2629.01
27	2647.94	2649.51	2651.46	2653.71	2657.40	2660.06	2663.49	2659.97	2654.94	2646.37	2636.78	2628.84
28	2647.96	2649.40	2651.49	2653.78	2657.46	2660.30	2663.53	2659.94	2654.69	2646.06	2636.47	2628.75
29	2647.99	2649.69	2651.68	2653.87	---	2660.60	2663.53	2659.90	2654.44	2645.76	2636.15	2628.58
30	2648.08	2649.76	2651.79	2655.94	---	2660.81	2663.51	2659.85	2654.12	2645.44	2635.81	2628.46
31	2648.15	---	2651.90	2654.03	---	2661.03	---	2659.81	---	2645.15	2635.51	---
MEAN	2648.61	2648.97	2650.74	2653.00	2655.53	2658.90	2662.34	2661.30	2657.31	2649.62	2640.23	2631.50
MAX	2649.85	2649.76	2651.90	2654.03	2657.46	2661.03	2663.53	2663.47	2659.69	2653.85	2644.81	2635.15
MIN	2647.94	2648.21	2649.81	2651.99	2654.06	2657.58	2661.17	2659.81	2654.12	2645.15	2635.51	2628.46
(†)	868900	885800	908700	932000	970500	1012000	1041000	997500	933000	838100	745200	682400
(‡)	-18600	+16900	+22900	+23300	+38500	+41500	+29000	-43500	-64500	-94900	-92900	-62800

CAL YR 1980 MEAN 2658.88 MAX 2670.30 MIN 2647.84 AC-FT‡ +43200
WTR YR 1981 MEAN 2651.49 MAX 2663.53 MIN 2628.46 AC-FT‡ -205100

† Contents, in acre-feet, at 2400, on last day of month.
‡ Change in contents, in acre-feet.

13183000 OWYHEE RIVER BELOW OWYHEE DAM, OR

LOCATION.--Lat 43°39'17", long 117°15'16", in SE¼ sec.18, T.22 S., R.45 E., Malheur County, Hydrologic Unit 17050110, on left bank 0.8 mi (1.3 km) downstream from Owyhee Dam, 20 mi (32 km) southwest of Nyssa, and at mile 27.3 (43.9 km).

DRAINAGE AREA.--11,160 mi² (28,900 km²), approximately.

PERIOD OF RECORD.--February 1929 to current year.

REVISED RECORDS.--WSP 983: 1941-42. WSP 1397: 1930, 1933, 1946.

GAGE.--Water-stage recorder. Datum of gage is 2,343.67 ft (714.351 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Records good. Flow regulated since October 1932 by Lake Owyhee (see station 13182500), and by many smaller reservoirs. Diversion of 467,800 acre-ft (577 hm³) from Lake Owyhee during the year for irrigation of lands below station and outside the basin. Many smaller diversions above Lake Owyhee for irrigation above station.

COOPERATION.--Water-stage recorder inspected by irrigation district employees.

AVERAGE DISCHARGE.--49 years (water years 1933-81), 346 ft³/s (9.799 m³/s), 250,700 acre-ft/yr (309 hm³/yr), not adjusted for storage or diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,900 ft³/s (649 m³/s) Apr. 15, 1952, gage height, 15.70 ft (4.785 m); no flow for part of Aug. 8, 9, 1932, when temporary diversion tunnel at Owyhee Dam was closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 211 ft³/s (5.98 m³/s) May 11; maximum gage height, 2.34 ft (0.713 m) Aug. 24; minimum discharge, 2.1 ft³/s (0.059 m³/s) Jan. 17-19, 21.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	126	4.8	4.8	2.7	2.5	5.6	7.3	99	191	180	159	162
2	123	4.8	5.0	2.6	2.5	5.6	6.9	100	190	178	155	145
3	120	5.0	3.2	2.6	2.6	5.8	6.9	102	192	179	155	149
4	120	5.0	3.0	2.5	2.6	5.6	7.1	125	193	178	154	149
5	120	5.0	3.0	2.5	2.7	5.4	7.8	137	193	179	155	150
6	120	5.0	3.0	2.4	2.8	5.4	8.4	155	193	172	158	151
7	120	5.2	3.0	2.4	2.8	5.5	8.8	167	195	166	158	140
8	120	5.4	3.0	2.4	3.0	5.4	11	165	194	168	157	131
9	119	5.6	3.0	2.4	3.0	5.4	15	190	182	166	158	133
10	119	5.4	2.9	2.4	3.0	5.5	15	205	173	169	158	131
11	118	5.0	2.9	2.3	3.0	5.5	34	202	169	168	158	126
12	119	5.2	2.9	2.4	3.1	5.3	88	202	171	170	159	124
13	119	5.0	2.9	2.3	3.1	5.2	89	202	170	168	157	125
14	119	5.0	2.9	2.3	3.6	5.1	89	202	170	169	157	125
15	103	5.2	2.9	2.3	3.3	5.2	89	202	171	165	158	127
16	90	5.2	2.9	2.3	3.3	5.3	89	202	171	166	159	118
17	90	5.0	2.9	2.2	3.3	5.4	107	202	172	164	172	110
18	90	5.0	2.9	2.2	3.3	5.5	116	196	170	165	184	110
19	90	5.0	2.9	2.2	3.4	5.7	118	185	170	164	184	111
20	91	5.0	2.9	2.2	4.3	6.2	116	188	183	164	185	110
21	91	4.8	2.9	2.2	4.7	5.7	106	175	193	164	186	110
22	90	5.0	2.9	2.2	5.6	5.9	104	168	193	164	186	103
23	90	5.2	2.9	2.4	6.0	5.7	104	167	175	164	184	92
24	91	5.0	3.2	2.4	5.7	6.1	106	166	161	165	184	86
25	91	4.8	3.3	2.3	5.6	7.6	105	165	174	164	183	86
26	91	4.8	3.0	2.5	5.6	7.6	106	167	180	165	182	86
27	55	4.8	2.8	2.5	5.5	6.9	107	172	181	165	176	88
28	21	4.8	2.8	2.6	5.4	6.6	101	176	180	165	173	80
29	20	4.8	2.7	2.6	---	7.4	97	177	181	166	174	81
30	14	4.8	2.7	2.6	---	8.1	97	177	179	165	175	81
31	4.9	---	2.7	2.6	---	7.8	---	186	---	169	170	---
TOTAL	2894.9	150.6	94.8	74.5	105.3	185.0	2062.2	5324	5410	5214	5213	3520
MEAN	93.4	5.02	3.06	2.40	3.76	5.97	68.7	172	180	168	168	117
MAX	126	5.6	5.0	2.7	6.0	8.1	118	205	195	180	186	162
MIN	4.9	4.8	2.7	2.2	2.5	5.1	6.9	99	161	164	154	80
AC-FT	5740	299	188	148	209	367	4090	10560	10730	10340	10340	6980
MEAN†	279	289	376	381	697	681	940	648	398	123	112	118
AC-FT†	17140	17200	23090	23450	38710	41870	55910	39870	23660	7540	6900	7050

CAL YR 1980 TOTAL 92531.3 MEAN 253 MAX 2800 MIN 2.7 AC-FT 183500
WTR YR 1981 TOTAL 30248.3 MEAN 82.9 MAX 205 MIN 2.2 AC-FT 60000

† Adjusted for diversions from Lake Owyhee and change in lake contents.

13184000 OWYHEE RIVER AT OWYHEE, OR
(National stream-quality accounting network station)

LOCATION.--Lat 43°46'57", long 117°03'30", in SE¼SE¼ sec.35, T.20 S., R.46 E., Malheur County, Hydrologic Unit 17050110, on left bank 0.3 mi (0.5 km) upstream from State Highway 201 bridge, 0.9 mi (1.4 km) southwest of Owyhee, and at mile 3.1 (5.0 km).

DRAINAGE AREA.--11,300 mi² (29,300 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1890 to June 1891, February to June 1892, February to July, October to December 1893, January 1895 to May 1897, August 1903 to September 1916, May 1920 to July 1929, July 1979 to current year. Monthly discharge only for some periods published in WSP 1317. Published as "at Rigsby", 1890-93, "at Nyssa", 1985-96 and as "at Owyhee" in WSP 370. Records for September, October 1903, May to October 1904, March, April 1905, published in WSP 135 in conjunction with records for Owyhee River near Owyhee and in WSP 370, have been found in error and should not be used.

REVISED RECORDS.--WSP 1317: 1890-91, 1904, 1909-11, 1929, drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 2,190 ft (668 m), from topographic map.

REMARKS.--Water-discharge records good. Flow regulated since October 1932 by Lake Owyhee (see station 13182500), and smaller reservoirs. Diversions from Lake Owyhee for irrigation of lands above station and outside the basin. Many smaller diversions above Lake Owyhee for irrigation.

AVERAGE DISCHARGE.--20 years (water years 1896, 1904-16, 1922-27), 1,048 ft³/s (29.7 m³/s), 759,300 acre-ft/yr (936 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft³/s (821 m³/s) Mar. 2, 1910, gage height, 12.9 ft (3.93 m) site and datum then in use, from rating curve extended above 14,000 ft³/s (396 m³/s); no flow July 7, 19, Aug. 14-16, 1924, July 5, 6, 1926. Maximum discharge recorded since construction of Owyhee Dam in 1932, 2,470 ft³/s (70.0 m³/s) June 6, 1980, gage height, 7.38 ft (2.249 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 510 ft³/s (14.4 m³/s) Apr. 20, gage height, 4.12 ft (1.256 m); minimum, 41 ft³/s (1.16 m³/s) May 2, 3.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	71	54	50	49	48	49	44	68	71	82	71
2	48	68	57	50	48	47	50	42	66	70	88	66
3	54	59	57	50	47	47	50	43	71	70	80	66
4	52	59	56	50	47	47	49	44	71	71	78	68
5	52	59	54	49	47	48	48	52	73	75	80	68
6	54	57	53	49	47	47	47	57	73	82	80	66
7	52	57	52	49	45	47	47	70	76	90	82	66
8	56	59	51	49	45	47	48	73	86	88	82	68
9	54	59	49	48	45	45	57	70	86	86	80	63
10	53	59	48	48	44	45	65	84	73	84	78	59
11	54	60	50	48	44	45	71	80	66	80	78	57
12	54	59	52	48	44	45	68	73	68	80	78	59
13	57	59	52	48	44	45	135	75	66	80	78	60
14	63	57	51	48	50	45	150	78	65	80	78	60
15	59	57	50	48	62	45	111	82	65	78	80	57
16	59	56	49	48	57	45	56	78	57	80	76	59
17	52	56	48	48	52	45	48	78	54	80	73	59
18	47	56	48	47	49	45	53	82	54	82	76	59
19	45	56	49	47	49	47	63	78	59	82	86	57
20	48	56	50	47	49	52	163	86	60	86	82	60
21	48	56	49	47	48	52	86	75	62	82	76	62
22	49	56	50	47	48	50	68	57	62	80	70	60
23	48	54	51	48	48	50	57	48	60	86	71	59
24	47	56	60	50	48	49	56	48	65	88	73	63
25	45	57	70	49	48	52	53	52	66	86	75	62
26	45	56	64	49	48	54	54	53	59	84	73	62
27	44	54	58	49	48	52	52	52	60	86	75	60
28	50	54	54	53	48	52	49	50	59	84	78	62
29	53	54	52	50	---	52	48	56	63	82	75	57
30	48	54	52	50	---	52	44	76	70	84	75	54
31	62	---	52	50	---	50	---	78	---	84	73	---
TOTAL	1599	1730	1642	1511	1348	1492	1995	2014	1983	2521	2409	1849
MEAN	51.6	57.7	53.0	48.7	48.1	48.1	66.5	65.0	66.1	81.3	77.7	61.6
MAX	63	71	70	53	62	54	163	86	86	90	88	71
MIN	44	54	48	47	44	45	44	42	54	70	70	54
AC-FT	3170	3430	3260	3000	2670	2960	3960	3990	3930	5000	4780	3670

CAL YR 1980 TOTAL 78414 MEAN 214 MAX 2330 MIN 44 AC-FT 155500
WTR YR 1981 TOTAL 22093 MEAN 60.5 MAX 163 MIN 42 AC-FT 43820

13184000 OWYHEE RIVER AT OWYHEE, OR--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March to September 1980.
WATER TEMPERATURES: July 1979 to current year.

INSTRUMENTATION.--Water-quality monitor since September 1980.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,230 micromhos Mar. 14, 1981; minimum recorded, 204 micromhos June 10, 1980.
WATER TEMPERATURES: Maximum, 25.0°C July 19, 1979; minimum, 0.5°C Jan. 28, 30, 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,230 micromhos Mar. 14; minimum, 499 micromhos July 9.
WATER TEMPERATURES: Maximum, 24.5°C July 5; minimum, 2.0°C Dec. 9-12.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
DEC												
02...	1445	60	1130	7.3	6.0	14.1	1000	4900	280	.00	77	22
JAN												
26...	1330	47	1180	7.9	5.5	12.2	K330	1100	320	16	87	24
MAR												
24...	1330	47	1160	8.3	12.4	12.0	1700	K180	290	23	81	22
MAY												
26...	1400	55	768	7.5	19.2	9.4	K520	K430	220	.00	62	16
JUL												
07...	1430	95	580	7.5	18.5	8.0	1300	3500	170	.00	50	12
AUG												
31...	1500	75	769	8.1	19.0	9.4	K520	3800	200	.00	56	14

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
DEC												
02...	150	1.0	290	250	42	1.4	3.0	.050	.87	--	1.10	4.1
JAN												
26...	160	10	300	280	61	1.5	3.1	.060	.84	.070	.84	3.8
MAR												
24...	150	9.0	270	300	42	1.5	2.6	.050	.85	.060	1.40	3.8
MAY												
26...	92	8.8	230	160	30	1.1	1.5	.080	1.1	.070	1.40	3.0
JUL												
07...	73	7.6	180	110	23	1.1	1.2	.120	.93	.090	--	2.5
AUG												
31...	94	8.4	220	140	33	1.1	1.1	.070	.79	.060	1.20	2.6

13184000 OWYHEE RIVER AT OWYHEE, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	CARBON, ORGANIC TOTAL (MG/L AS C)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	TUR-BID-ITY (NTU)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC												
02...	.050	.110	--	--	15	43	789	774	4.0	114	18	29
JAN												
26...	.070	.110	15	1.0	--	48	831	866	8.6	118	15	34
MAR												
24...	.060	.100	9.4	.6	--	41	803	821	12	86	11	31
MAY												
26...	.160	.200	--	--	15	31	632	546	56	95	14	97
JUL												
07...	.090	.300	4.9	.3	--	31	418	422	80	178	46	99
AUG												
31...	.080	.180	3.9	1.0	--	37	510	521	47	99	20	97

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)
JAN										
26...	60	60	50	100	<1	<1	<10	10	<3	<1
MAR										
24...	30	75	50	100	<1	<1	10	20	<3	<1
JUL										
07...	29	32	100	100	1	<1	<10	10	3	3
AUG										
31...	32	34	45	200	<1	<1	<10	10	<3	1

DATE	COPPER, DIS-SOLVED (UG/L AS CU)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)
JAN									
26...	2	4	20	620	2	2	40	80	--
MAR									
24...	4	5	10	720	--	--	60	100	<.1
JUL									
07...	8	11	150	5800	3	<1	50	200	<.1
AUG									
31...	10	13	29	4600	1	13	35	120	.1

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, DIS-SOLVED (UG/L AS NI)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
JAN									
26...	<.1	<1	4	4	6	<1	<1	10	10
MAR									
24...	.2	4	3	5	4	<1	<1	5	20
JUL									
07...	.2	2	6	2	2	<1	<1	20	<1
AUG									
31...	.3	2	5	3	3	<1	<1	35	50

13184000 OWYHEE RIVER AT OWYHEE, OR--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO AUGUST 1981

DATE	MAR 24,81		MAY 26,81		AUG 31,81	
TIME	1330		1400		1500	
TOTAL CELLS/ML	4200		4200		780	
DIVERSITY: DIVISION	1.0		0.5		0.7	
.CLASS	1.0		0.5		0.7	
..ORDER	1.7		2.3		1.6	
...FAMILY	1.9		2.3		1.9	
....GENUS	1.9		2.6		1.9	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)						
.BACILLARIOPHYCEAE						
..ACHNANTHALES						
...ACHNANTHACEAE						
....ACHNANTHES	--	-	82	2	--	-
....COCCONEIS	--	-	160	4	82	11
....RHOICOSPHENIA	34	1	27	1	--	-
..BACILLARIALES						
...NITZSCHIACEAE						
....HANTZSCHIA	--	-	55	1	--	-
....NITZSCHIA	67	2	580	14	--	-
..EUPODISCALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	2100#	49	82	11
....STEPHANODISCUS	2800#	67	--	-	--	-
..FRAGILARIALES						
...FRAGILARIACEAE						
....FRAGILARIA	--	-	490	12	--	-
....SYNEDRA	34	1	55	1	--	-
..NAVICULALES						
...CYMBELLACEAE						
....CYMBELLA	--	-	--	-	68	9
...GOMPHONEMACEAE						
....GOMPHONEMA	470	11	27	1	--	-
...NAVICULACEAE						
....NAVICULA	34	1	110	3	400#	51
..SURIRELLALES						
...SURIRELLACEAE						
....CYMATOPLEURA	--	-	27	1	--	-
....SURIRELLA	--	-	55	1	--	-
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...MICRACTINIACEAE						
....MICRACTINIUM	130	3	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	200	5	--	-	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	67	2	330	8	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	110	3	--	-
...PHACOTACEAE						
....PHACOTUS	--	-	27	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	170	4	--	-	--	-
...CRYPTOMONADACEAE						
....CRYPTOMONAS	100	2	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	67	2	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	34	1	--	-	150#	19

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

13184000 OWYHEE RIVER AT OWYHEE, OR--Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	863	908	1130	1150	1180	1180	1140	822	643	665	718	749
2	891	1000	1120	1150	1190	1180	1130	820	670	643	710	766
3	811	1030	1150	1160	1190	1180	1120	815	653	622	709	767
4	804	1010	1140	1160	1190	1180	1120	805	646	623	723	713
5	809	1010	1140	1150	1190	1160	1120	794	621	628	728	761
6	803	1010	1150	1150	1190	1170	1130	744	619	612	725	774
7	801	1010	1160	1150	1180	1170	1120	723	605	587	711	778
8	790	1010	1170	1160	1180	1160	1110	681	611	578	700	796
9	813	1010	1170	1170	1180	1170	1080	675	610	547	705	825
10	809	1010	1170	1180	1190	1180	995	649	629	565	704	843
11	796	1010	1170	1180	1190	1180	910	626	627	619	721	863
12	811	1040	1170	1180	1190	1180	871	631	647	676	721	855
13	796	1110	1170	1180	1190	1170	677	623	635	669	738	837
14	798	1100	1180	1180	1170	1170	544	614	649	673	748	825
15	786	1130	1170	1180	1120	1170	561	610	657	684	745	902
16	792	1130	1180	1170	1090	1170	681	613	697	673	748	884
17	812	1130	1180	1180	1120	1180	744	618	713	715	743	885
18	883	1130	1180	1180	1140	1170	746	609	702	712	741	893
19	849	1130	1180	1170	1150	1170	686	602	692	694	731	893
20	796	1130	1180	1180	1150	1170	606	595	716	678	730	876
21	789	1130	1170	1170	1160	1160	667	624	707	693	745	879
22	799	1130	1170	1180	1160	1160	714	682	713	715	768	883
23	873	1110	1170	1160	1170	1150	758	745	670	713	785	871
24	899	1070	1150	1150	1180	1160	794	769	674	715	771	883
25	901	1100	958	1160	1180	1150	801	766	655	717	755	896
26	897	1110	1040	1180	1170	1130	805	754	661	708	751	905
27	902	1130	1070	1170	1160	1150	806	789	681	705	750	919
28	889	1140	1120	1150	1170	1140	817	766	683	661	753	909
29	827	1140	1140	1160	---	1140	818	735	672	669	753	925
30	919	1130	1140	1170	---	1130	828	691	673	690	750	944
31	897	---	1150	1180	---	1130	---	637	---	705	759	---
MEAN	836	1070	1150	1170	1170	1160	863	698	661	663	737	850

13184000 OWYHEE RIVER AT OWYHEE, OR--Continued

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

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.5	14.0	9.5	8.0	6.5	5.0	7.5	6.5	7.0	4.0	10.5	6.5
2	17.0	13.0	11.5	8.5	6.5	5.0	7.0	6.5	6.0	4.0	---	7.0
3	16.5	12.5	12.0	10.0	8.5	6.5	7.0	6.0	6.0	3.5	---	7.5
4	16.5	13.0	12.0	9.5	8.5	6.5	6.5	6.0	5.5	3.0	9.5	8.0
5	16.0	13.0	11.0	8.5	6.5	5.0	6.5	6.0	5.0	4.0	8.5	7.0
6	16.0	13.0	11.0	10.0	6.5	4.5	6.5	6.0	6.5	4.5	9.5	5.5
7	16.0	13.0	12.0	10.5	5.5	3.0	6.0	5.0	7.0	4.0	9.5	6.0
8	16.0	13.0	11.5	10.0	4.5	2.5	6.0	5.0	7.0	4.0	---	8.0
9	15.5	12.5	11.5	9.5	4.0	2.0	5.5	4.5	6.5	4.0	---	8.0
10	14.0	11.0	11.0	9.5	4.5	2.0	5.0	4.0	5.5	2.5	---	8.0
11	14.5	11.0	10.0	9.0	4.5	2.0	5.0	4.0	4.0	2.5	---	8.0
12	14.0	12.5	9.5	7.5	4.5	2.0	5.0	4.0	6.5	3.0	---	8.0
13	13.0	11.0	8.5	6.5	3.5	2.5	5.0	4.5	5.0	4.0	---	8.5
14	13.5	11.0	7.0	5.0	3.5	3.0	4.5	4.0	9.0	5.0	---	9.0
15	11.5	10.0	7.5	5.0	5.0	3.0	4.0	3.5	8.0	6.5	13.5	9.0
16	11.5	9.0	6.5	5.0	4.0	3.0	4.0	3.0	8.0	7.5	12.0	9.0
17	12.5	9.0	7.0	5.0	4.0	3.0	5.0	3.5	9.5	6.5	11.0	7.0
18	12.0	9.0	7.0	5.0	3.5	3.0	5.5	4.0	8.5	8.0	10.0	7.0
19	12.5	9.0	7.0	5.0	4.0	3.0	6.0	4.5	8.5	7.5	9.5	8.5
20	12.5	9.0	6.5	5.0	5.0	---	5.0	4.5	8.5	6.0	8.5	8.0
21	12.5	10.0	5.5	4.5	---	---	5.5	4.5	9.0	5.5	12.5	7.5
22	12.0	9.0	7.5	5.5	6.0	---	6.5	5.5	9.5	6.0	12.5	10.0
23	10.5	7.5	6.5	5.0	6.5	5.0	6.5	6.0	9.5	6.5	12.0	9.5
24	10.0	7.5	6.5	4.0	5.5	5.0	8.0	6.0	10.0	7.0	13.5	9.5
25	10.0	9.0	5.0	4.0	6.0	4.0	7.0	6.0	8.5	6.5	12.0	10.5
26	11.5	9.0	4.5	3.5	8.0	6.0	6.0	5.0	10.0	6.5	12.0	9.5
27	12.0	8.5	5.5	4.0	7.5	7.0	5.0	4.5	10.0	6.5	13.5	9.0
28	10.5	8.0	6.5	5.0	7.0	6.5	6.5	5.0	10.0	7.0	14.0	9.5
29	10.0	7.5	6.0	5.0	8.0	6.5	6.5	5.5	---	---	12.5	9.0
30	8.5	7.0	7.5	6.0	7.5	7.0	5.5	5.0	---	---	10.5	8.0
31	9.5	7.5	---	---	7.5	7.0	6.5	4.0	---	---	11.5	8.5
MONTH	17.5	7.0	12.0	3.5	8.5	2.0	8.0	3.0	10.0	2.5	14.0	5.5

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

13214000 MALHEUR RIVER NEAR DREWSEY, OR

LOCATION.--Lat 43°47'05", long 118°19'50", in NE¼SE¼ sec.31, T.20 S., R.36 E., Harney County, Hydrologic Unit 17050116, on left bank 300 ft (91 m) downstream from bridge on U.S. Highway 20, 0.5 mi (0.8 km) downstream from Cottonwood Creek, 3.0 mi (4.8 km) southeast of Drewsey, and at mile 129.0 (207.6 km).

DRAINAGE AREA.--910 mi² (2,360 km²), approximately.

PERIOD OF RECORD.--June 1920 to September 1921, November, December 1921, March, April 1922, April to September 1923, June 1926 to current year. Monthly discharge only for some periods, published in WSP 1317. March to September 1914 at site 13 mi (21 km) upstream; records not equivalent owing to inflow from several creeks.

REVISED RECORDS.--WSP 1093: 1927. WSP 1287: Drainage area. WSP 1397: 1921, 1927-31, 1937, drainage area (former site). WSP 1517: 1952. WDR OR-78-1: 1976(P).

GAGE.--Water-stage recorder. Datum of gage is 3,479.13 ft (1,060.439 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 27, 1923, water-stage recorder or nonrecording gage at site 0.5 mi (0.8 km) downstream at different datum. Apr. 27, 1923, to June 6, 1939, water-stage recorder at site 7 mi (11 km) downstream at different datum.

REMARKS.--Records good except those for July to September, which are poor. Slight regulation by small reservoirs above station. Diversions for irrigation above station.

AVERAGE DISCHARGE.--55 years (water years 1927-81), 180 ft³/s (5.098 m³/s), 130,400 acre-ft/yr (161 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s (340 m³/s) Dec. 23, 1964, gage height, 13.50 ft (4.115 m), from rating curve extended above 4,500 ft³/s (127 m³/s) on basis of contracted-opening measurement at gage height 13.20 ft (4.023 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft³/s (22.7 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 25	1930	888	25.1	5.62	1.713	Mar. 26	0500	1,130	32.0	6.23	1.899
Feb. 17	0130	*1,570	44.5	*7.25	2.210						

Minimum daily, 5.1 ft³/s (0.14 m³/s) July 29-31.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	73	70	110	94	181	461	275	217	19	7.0	8.8
2	35	72	69	110	70	181	431	257	190	17	10	8.8
3	36	72	104	115	70	188	371	250	185	16	14	8.8
4	38	72	160	120	70	192	311	222	179	18	17	8.8
5	37	72	160	116	70	192	270	199	162	27	21	8.8
6	35	73	114	112	70	168	280	168	158	37	24	8.8
7	37	82	84	108	70	156	299	144	144	49	26	8.8
8	38	98	70	104	70	160	278	136	181	61	28	8.8
9	39	92	60	104	70	172	252	126	257	56	31	8.8
10	40	87	60	98	70	183	252	118	197	48	37	8.8
11	41	82	60	81	73	192	240	106	154	45	32	9.0
12	42	81	66	78	78	201	220	85	162	45	26	9.2
13	46	73	66	76	98	208	206	84	174	39	21	9.3
14	63	58	60	79	772	206	185	110	158	35	16	9.4
15	73	70	66	76	711	217	222	172	146	29	13	9.7
16	69	73	82	78	824	250	257	183	126	24	11	10
17	67	78	84	75	1160	250	270	154	114	20	9.4	11
18	67	81	84	90	572	217	275	168	96	17	9.0	12
19	70	78	81	118	746	201	305	314	114	15	9.0	13
20	69	73	84	92	590	206	458	404	96	13	8.8	15
21	67	75	92	102	386	232	461	458	82	11	8.8	18
22	66	79	102	104	302	242	434	308	78	10	8.8	22
23	69	82	112	110	287	290	389	267	67	9.0	8.8	26
24	66	81	118	154	267	252	374	255	63	8.4	8.8	32
25	72	70	464	132	252	356	389	299	54	7.4	8.8	37
26	78	60	443	114	217	940	416	311	41	6.8	8.8	44
27	78	70	278	102	199	584	452	267	33	6.2	8.8	37
28	73	82	222	114	188	482	365	250	27	5.7	8.8	33
29	70	79	190	132	---	545	320	230	23	5.1	8.8	29
30	69	79	164	126	---	572	299	225	21	5.1	8.8	26
31	69	---	130	108	---	452	---	240	---	5.1	8.8	---
TOTAL	1754	2297	3999	3238	8426	8868	9742	6785	3679	709.8	467.0	499.6
MEAN	56.6	76.6	129	104	301	286	325	219	123	22.9	15.1	16.7
MAX	78	98	464	154	1160	940	461	458	237	61	37	44
MIN	35	58	60	75	70	156	185	84	21	5.1	7.0	8.8
AC-FT	3480	4560	7930	6420	16710	17590	19320	13460	7300	1410	926	991

CAL YR 1980 TOTAL 79879.8 MEAN 218 MAX 2160 MIN 7.2 AC-FT 158400
WTR YR 1981 TOTAL 50464.4 MEAN 138 MAX 1160 MIN 5.1 AC-FT 100100

NOTE.--No gage-height record Aug. 11 to Sept. 24

13214500 WARMSPRINGS RESERVOIR NEAR RIVERSIDE, OR

LOCATION.--Lat 43°35'07", long 118°12'30", on line between NW¼SW¼ and SW¼SW¼ sec.8, T.23 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on Bureau of Reclamation lands, near right end of dam on Malheur River, 3 mi (5 km) northwest of Riverside, 4 mi (6 km) upstream from South Fork, and at mile 114.0 (183.4 km).

DRAINAGE AREA.--1,100 mi² (2,850 km²), approximately.

PERIOD OF RECORD.--January 1920 to October 1929, December 1929 to current year. Prior to Sept. 3, 1980, monthend contents and change in contents only.

GAGE.--Water-stage recorder. Prior to May 29, 1964, nonrecording gage read daily or weekly. Datum of gage is 3,327.0 ft (1,014.07 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation); gage readings have been reduced to elevations NVGD.

REMARKS.--Reservoir is formed by concrete-arch dam. Storage began in 1919. Capacity, 191,000 acre-ft (236 hm³) between elevations 3,327.00 ft (1,014.070 m), bottom of outlet tunnel, and 3,406.00 ft (1,038.149 m), top of flashboards. Dead storage, 1,400 acre-ft (1.73 hm³) below elevation 3,327.00 ft (1,014.070 m) not included in records. Water used to irrigate lands on both sides of river between Namorf and Ontario.

COOPERATION.--Capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 196,100 acre-ft (242 hm³) Apr. 16, May 13, 1958, elevation, 3,407.10 ft (1,038.484 m); no contents Sept 18 to Nov. 1, 1929, Aug. 26 to sometime in November 1935, Sept. 18 to Oct. 11, 1950, sometime in August to Oct. 3, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 189,300 acre-ft (233 hm³) Apr. 27-30, elevation, 3,405.64 ft (1,038.039 m); minimum, 71,360 acre-ft (88.0 hm³) Sept. 30, elevation, 3,373.86 ft (1,028.352 m).

Capacity table (elevation, in feet, and useable contents, in acre-feet)

3,327	0	3,345	10,150	3,380	90,520
3,330	295	3,350	16,930	3,390	124,600
3,335	1,960	3,360	35,400	3,400	164,400
3,340	5,090	3,370	60,140	3,406	191,000

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3388.20	3388.00	3389.22	3391.54	3393.32	3398.54	3403.26	3405.59	3402.70	3399.02	3389.56	3379.65
2	3388.13	3388.02	3389.29	3391.61	3393.37	3398.63	3403.44	3405.47	3402.68	3398.70	3389.20	3379.34
3	3388.04	3388.06	3389.34	3391.68	3393.41	3398.72	3403.62	3405.31	3402.63	3398.39	3388.88	3379.04
4	3387.97	3388.11	3389.40	3391.72	3393.44	3398.84	3403.80	3405.15	3402.59	3398.02	3388.57	3378.75
5	3387.88	3388.13	3389.47	3391.79	3393.49	3398.95	3403.98	3404.97	3402.54	3397.67	3388.27	3378.43
6	3387.81	3388.20	3389.54	3391.86	3393.54	3399.04	3404.10	3404.77	3402.52	3397.32	3387.94	3378.13
7	3387.75	3388.25	3389.61	3391.90	3393.57	3399.11	3404.23	3404.54	3402.45	3397.01	3387.61	3377.81
8	3387.68	3388.29	3389.63	3391.95	3393.62	3399.20	3404.35	3404.31	3402.36	3396.74	3387.29	3377.54
9	3387.59	3388.34	3389.65	3392.02	3393.67	3399.29	3404.47	3404.13	3402.29	3396.46	3386.92	3377.27
10	3387.52	3388.38	3389.70	3392.06	3393.71	3399.38	3404.56	3403.93	3402.25	3396.17	3386.59	3377.02
11	3387.43	3388.43	3389.72	3392.11	3393.75	3399.45	3404.66	3403.77	3402.20	3395.98	3386.25	3376.79
12	3387.36	3388.47	3389.75	3392.15	3393.79	3399.56	3404.75	3403.61	3402.15	3395.72	3385.92	3376.61
13	3387.29	3388.52	3389.79	3392.20	3393.85	3399.68	3404.81	3403.43	3402.09	3395.46	3385.59	3376.38
14	3387.31	3388.54	3389.81	3392.22	3394.14	3399.77	3404.81	3403.27	3402.04	3395.18	3385.28	3376.15
15	3387.34	3388.56	3389.84	3392.29	3394.78	3399.88	3404.81	3403.11	3401.97	3394.91	3384.98	3375.95
16	3387.36	3388.61	3389.88	3392.31	3395.21	3399.97	3404.83	3402.95	3401.93	3394.63	3384.70	3375.75
17	3387.38	3388.63	3389.90	3392.36	3395.93	3400.11	3404.89	3402.79	3401.84	3394.32	3384.40	3375.43
18	3387.43	3388.68	3389.95	3392.38	3396.40	3400.20	3404.95	3402.63	3401.77	3394.00	3384.10	3375.20
19	3387.45	3388.72	3390.00	3392.43	3396.75	3400.31	3405.00	3402.52	3401.68	3393.68	3383.83	3375.04
20	3387.50	3388.77	3390.04	3392.50	3397.12	3400.45	3405.09	3402.52	3401.59	3393.37	3383.53	3374.86
21	3387.54	3388.79	3390.11	3392.54	3397.41	3400.59	3405.22	3402.56	3401.47	3393.04	3383.23	3374.68
22	3387.56	3388.84	3390.18	3392.61	3397.41	3400.70	3405.33	3402.61	3401.38	3392.72	3382.95	3374.50
23	3387.61	3388.90	3390.22	3392.70	3397.78	3400.84	3405.44	3402.61	3401.20	3392.38	3382.67	3374.36
24	3387.65	3388.95	3390.29	3392.79	3397.96	3400.97	3405.51	3402.61	3401.02	3392.04	3382.37	3374.20
25	3387.70	3389.00	3390.43	3392.86	3398.10	3401.13	3405.55	3402.59	3400.79	3391.69	3382.08	3374.09
26	3387.75	3389.04	3390.79	3392.93	3398.23	3401.47	3405.61	3402.63	3400.59	3391.35	3381.80	3374.04
27	3387.79	3389.06	3391.00	3393.00	3398.34	3401.90	3405.64	3402.63	3400.31	3390.73	3381.49	3373.95
28	3387.84	3389.11	3391.15	3393.09	3398.44	3402.25	3405.64	3402.70	3399.97	3390.42	3381.13	3373.90
29	3387.88	3389.15	3391.27	3393.15	---	3402.54	3405.63	3402.72	3399.68	3390.33	3380.82	3373.88
30	3387.90	3389.20	3391.38	3393.20	---	3402.81	3405.63	3402.75	3399.36	3390.18	3380.27	3373.86
31	3387.95	---	3391.45	3393.27	---	3403.06	---	3402.72	---	3389.86	3379.97	---
MEAN	3387.66	3388.59	3390.06	3392.36	3395.38	3400.24	3404.79	3403.48	3401.67	3394.44	3384.78	3376.09
MAX	3388.20	3389.20	3391.45	3393.27	3398.44	3403.06	3405.64	3405.59	3402.70	3399.02	3389.56	3379.65
MIN	3387.29	3388.00	3389.22	3391.54	3393.32	3398.54	3403.26	3402.52	3399.36	3389.86	3379.97	3373.86
(†)	117100	121600	130000	136900	157800	177800	189300	176300	161700	124100	90420	71360
(‡)	-1100	+4500	+8400	+6900	+20900	+20000	+11500	-13000	-14600	-37600	-33680	-19060

WTR YR 1981 MEAN 3393.28 MAX 3405.64 MIN 3373.86 AC-FT‡ -46840

† Contents, in acre-feet, at 2400 on last day of month.
‡ Change in contents, in acre-feet.

13215000 MALHEUR RIVER BELOW WARMSPRINGS RESERVOIR, NEAR RIVERSIDE, OR

LOCATION (REVISED).--Lat 43°34'29", long 118°12'31", on line between NW¼SW¼ and SW¼NW¼ sec.17, T.23 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on left bank 0.9 mi (1.4 km) downstream from Warmsprings Dam, 3.0 mi (4.8 km) upstream from South Fork, 4.0 mi (6.4 km) northwest of Riverside, and at mile 113.0 (181.8 km).

DRAINAGE AREA.--1,100 mi² (2,850 km²), approximately.

PERIOD OF RECORD.--January 1906 to March 1907 and December 1908 (gage heights only), January 1909 to September 1910, December 1914 to July 1917, March 1919 to current year. Monthly discharge only for some periods, published in WSP 1317. Figures of discharge for January 1906 to March 1907, published in WSP 272 and 370, have been found to be unreliable and should not be used. Published as Middle Fork of Malheur River at Riverside 1906-7, as Middle Fork of Malheur River above South Fork, at Riverside 1909-10, as Malheur River above South Fork, at Riverside in WSP 370, 1906-10, and as Malheur River at Warmsprings reservoir site, near Riverside 1914-17.

REVISED RECORDS.--WSP 833: 1936. WSP 1063: 1942-45. WSP 1397: 1909-10, 1917. WSP 1447: 1955. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,305 ft (1,007 m), by barometer. See WSP 1317 or 1737 for history of changes prior to Sept. 29, 1949.

REMARKS.--Records excellent except those for November to March, which are good. Flow completely regulated since November 1919 by Warmsprings Reservoir (see station 13214500). Diversions for irrigation above station.

AVERAGE DISCHARGE.--62 years (water years 1920-81), 176 ft³/s (4.984 m³/s), 127,500 acre-ft/yr (157 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 7,200 ft³/s (204 m³/s) Mar. 1, 1910, gage height, 10.7 ft (3.26 m), site and datum then in use, from rating curve extended above 820 ft³/s (23.2 m³/s); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 695 ft³/s (19.7 m³/s) June 29, gage height, 5.28 ft (1.609 m); no flow Dec. 13-25.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	176	.10	.10	.06	.08	.40	3.9	500	283	645	570	420
2	175	.10	.10	.05	.05	.40	5.1	555	265	640	575	395
3	175	.10	.10	.05	.05	.40	7.7	570	244	670	575	385
4	175	.10	.10	.05	.05	.40	7.1	590	244	685	575	385
5	176	.10	.09	.05	.05	.40	9.6	600	248	680	585	400
6	176	.10	.08	.05	.05	.35	6.1	620	287	635	595	395
7	176	.10	.08	.05	.05	.35	3.9	630	305	580	615	385
8	175	.10	.08	.05	.05	.35	4.3	600	296	560	625	380
9	175	.10	.08	.05	.05	.35	4.6	575	292	555	625	350
10	174	.10	.08	.05	.05	.35	6.1	515	296	555	640	301
11	174	.08	.08	.05	.05	.35	8.3	410	296	520	645	269
12	174	.08	.03	.05	.05	.35	10	415	296	505	645	265
13	75	.08	.00	.05	.06	.35	147	450	256	510	605	274
14	.79	.08	.00	.05	.07	.35	244	475	236	510	575	269
15	.41	.08	.00	.05	.08	.30	175	500	260	540	565	256
16	.30	.08	.00	.05	.09	.35	117	515	287	585	570	241
17	.30	.08	.00	.05	.12	.30	120	515	296	620	560	219
18	.30	.08	.00	.08	.55	.30	147	495	296	600	545	208
19	.29	.08	.00	.08	.65	.35	171	440	296	580	545	211
20	.28	.08	.00	.08	.55	.48	171	390	315	580	540	211
21	2.3	.08	.00	.08	.55	.35	168	345	325	610	545	215
22	.61	.08	.00	.08	.55	.35	199	330	355	625	545	217
23	.30	.08	.00	.20	.55	.35	220	310	415	620	540	210
24	.30	.08	.00	.20	.55	.35	248	301	495	620	535	206
25	.35	.08	.00	.12	.48	2.2	296	278	525	620	540	196
26	.42	.08	.20	.08	.48	23	315	265	555	620	550	157
27	.29	.08	.16	.08	.48	4.3	340	196	585	585	510	141
28	.25	.08	.12	.08	.40	1.2	385	147	625	560	515	129
29	.10	.08	.12	.08	---	1.9	410	192	665	560	480	84
30	.10	.09	.08	.08	---	1.9	450	256	660	560	455	67
31	.10	---	.07	.08	---	2.5	---	283	---	550	445	---
TOTAL	2183.79	2.61	1.75	2.26	6.94	45.63	4399.7	13263	10779	18285	17415	7841
MEAN	70.4	.087	.056	.073	.25	1.47	147	428	359	590	562	261
MAX	176	.10	.20	.20	.65	23	450	630	665	685	645	420
MIN	.10	.08	.00	.05	.05	.30	3.9	147	236	505	445	67
AC-FT	4330	5.2	3.5	4.5	14	91	8730	26310	21380	36270	34540	15550

CAL YR 1980	TOTAL 59659.29	MEAN 163	MAX 1200	MIN .00	AC-FT 118300			
WTR YR 1981	TOTAL 74225.68	MEAN 203	MAX 685	MIN .00	AC-FT 147200			

NOTE.--No gage-height record Oct. 30 to Dec. 1.

13216500 NORTH FORK MALHEUR RIVER ABOVE BEULAH RESERVOIR, NEAR BEULAH, OR

LOCATION.--Lat 43°57'01", long 118°10'28", in NW¼NE¼ sec.4, T.19 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on left bank 500 ft (152 m) upstream from Beulah Reservoir, 2.5 mi (4.0 km) upstream from Warm Springs Creek, 3.5 mi (5.6 km) northwest of Beulah, and at mile 18.0 (29.0 km).

DRAINAGE AREA.--355 mi^2 (919 km^2).

PERIOD OF RECORD.--January to September 1914 (published as "as Scott's Ranch, near Beulah"), June 1936 to current year. Published as "above Agency Valley Reservoir, near Beulah", June 1936 to September 1968.

REVISED RECORDS.--WSP 1934: 1960(M).

GAGE.--Water-stage recorder. Datum of gage is 3,349.4 ft (1,020.90 m) National Geodetic Vertical Datum of 1929. Jan. 1 to Sept. 30, 1914, nonrecording gage and June 10, 1936, to Oct. 14, 1958, water-stage recorder at site 0.5 mi (0.8 km) upstream at different datums. Oct. 15, 1958, to Oct. 8, 1975, water-stage recorder at present site at datum 1.6 ft (0.49 m) higher.

REMARKS.--Records good. No regulation. Diversions for irrigation above station.

AVERAGE DISCHARGE.--45 years (water years 1973-81), 129 ft^3/s (3.653 m^3/s), 93,460 acre-ft/yr (115 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,970 ft^3/s (112 m^3/s) Dec. 23, 1964, gage height, 9.90 ft (3.018 m), present datum, from floodmark, from rating curve extended above 1,300 ft^3/s (36.8 m^3/s), on basis of slope-area measurement of peak flow; maximum gage height, 11.0 ft (3.35 m), present datum, sometime during period Dec. 17-23, 1964 (icejam); minimum discharge, 8.5 ft^3/s (0.24 m^3/s) Dec. 13, 1967, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft^3/s (14.2 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 16	1800	*1,320	37.4	*5.61	1.710	Mar. 25	2330	736	20.8	4.52	1.378

Minimum, 21 ft^3/s (0.59 m^3/s) Dec. 7, result of freezeup.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	59	34	66	47	137	217	298	184	68	38	45
2	49	58	62	62	47	145	197	307	178	67	39	44
3	50	58	89	64	47	147	190	298	170	63	40	44
4	49	58	133	68	47	152	176	272	149	62	41	43
5	51	57	88	68	47	143	180	247	147	60	40	41
6	49	61	70	71	47	121	188	226	145	62	40	42
7	48	75	37	68	47	128	182	210	147	79	39	43
8	50	76	30	67	47	137	170	199	190	71	40	43
9	54	67	30	63	47	142	172	194	184	67	39	43
10	53	63	30	57	47	142	157	182	150	62	41	43
11	53	61	30	58	54	145	157	170	137	59	41	43
12	56	59	30	54	75	149	154	163	147	57	39	42
13	62	46	30	56	80	154	152	156	145	55	40	42
14	64	45	30	54	260	150	156	174	128	55	41	43
15	61	45	36	56	257	161	182	190	116	50	40	41
16	59	50	42	54	568	186	203	176	107	49	39	37
17	58	61	38	62	436	157	210	157	109	48	39	39
18	57	61	38	78	280	149	233	180	103	46	41	40
19	57	58	38	74	385	147	319	245	103	47	43	39
20	56	56	40	65	252	149	385	260	101	47	47	44
21	56	58	52	69	184	142	367	265	97	45	44	46
22	55	63	65	70	182	147	334	252	92	43	44	44
23	54	61	84	83	192	149	325	245	87	43	43	44
24	57	57	78	95	174	140	352	242	83	43	41	45
25	59	48	188	73	149	240	355	270	79	41	42	52
26	61	50	214	62	143	355	358	247	75	40	41	52
27	59	62	145	76	133	226	337	230	74	40	41	56
28	58	65	115	76	133	219	295	210	73	40	40	62
29	58	61	92	85	---	255	285	201	67	39	42	52
30	59	60	85	75	---	221	280	203	68	39	43	49
31	59	---	81	65	---	210	---	203	---	39	44	---
TOTAL	1720	1759	2154	2094	4407	5245	7268	6872	3635	1626	1272	1343
MEAN	55.5	58.6	69.5	67.5	157	169	242	222	121	52.5	41.0	44.8
MAX	64	76	214	95	568	355	385	307	190	79	47	62
MIN	48	45	30	54	47	121	152	156	67	39	38	37
AC-FT	3410	3490	4270	4150	8740	10400	14420	13630	7210	3230	2520	2660

CAL YR 1980 TOTAL 56297 MEAN 154 MAX 855 MIN 30 AC-FT 111700
WTR YR 1981 TOTAL 39395 MEAN 108 MAX 568 MIN 30 AC-FT 78140

13217000 BEULAH RESERVOIR AT BEULAH, OR

LOCATION.--Lat 43°54'41", long 118°09'25", in SW¼SE¼ sec.15, T.19 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on top of dam near right end of dam on North Fork Malheur River, 0.2 mi (0.3 km) northwest of Beulah, and at mile 15.0 (24.1 km).

DRAINAGE AREA.--440 mi² (1,140 km²), approximately.

PERIOD OF RECORD.--December 1935 to current year. Prior to October 1968, published as Agency Valley Reservoir at Beulah. Prior to March 1979, monthend contents only.

REVISED RECORDS.--WSP 1397: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7.49 ft (2.283 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1978, published as at National Geodetic Vertical Datum of 1929, Bureau of Reclamation construction datum. Prior to Mar. 28, 1979, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill, rock-faced dam. Storage began December 1935. Capacity, 59,920 acre-ft (73.9 hm³) between elevations 3,263.21 ft (994.626 m), bottom of outlet tunnel, and 3,340.0 ft (1,018.03 m), top of spillway gates; with gates open the capacity is 32,220 acre-ft (39.7 hm³). No dead storage. Water is used for irrigation of lands below Juntura, on Vale project of Bureau of Reclamation.

COOPERATION.--Prior to Mar. 28, 1979, daily elevations furnished by Vale-Oregon Irrigation District. Capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 62,770 acre-ft (77.4 hm³) May 3, 1941, elevation, 3,341.50 ft (1,018.489 m); no contents Sept.17 to Oct. 13, 1950, Aug. 28 to Oct. 4, 1955, Aug. 13 to Oct. 1, 1961, Sept. 21 to Oct. 5, 1968, sometime Aug. 1-31 to Oct. 3, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 60,170 acre-ft (74.2 hm³) May 27, elevation, 3,340.13 ft (1,018.072 m); minimum, 5,160 acre-ft (6.36 hm³) Oct. 13, elevation, 3,295.12 ft (1,003.743 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

3,285	2,020	3,300	8,980	3,320	28,250
3,290	3,750	3,305	12,520	3,330	42,550
3,295	6,090	3,310	16,950	3,341	61,840

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3294.55	3297.71	3305.29	3309.61	3314.12	3322.65	3330.49	3338.57	3339.41	3334.85	3325.99	3315.55
2	3294.15	3297.90	3305.55	3309.76	3314.22	3322.86	3330.77	3338.85	3339.25	3334.50	3325.72	3315.29
3	3293.97	3298.11	3305.85	3309.94	3314.31	3323.09	3331.02	3339.15	3339.14	3334.18	3325.46	3315.06
4	3293.79	3298.30	3304.14	3310.11	3314.40	3323.32	3331.26	3339.31	3339.05	3333.82	3325.24	3314.82
5	3293.61	3298.50	3304.37	3310.26	3314.52	3323.55	3331.48	3339.49	3338.94	3333.42	3325.02	3314.60
6	3293.45	3298.74	3304.55	3310.41	3314.66	3323.70	3331.71	3339.61	3338.80	3333.05	3324.79	3314.40
7	3293.43	3298.99	3304.61	3310.56	3314.78	3323.91	3331.92	3339.75	3338.67	3332.71	3324.55	3314.20
8	3293.41	3299.25	3304.69	3310.71	3314.88	3324.10	3332.15	3339.91	3338.60	3332.44	3324.28	3314.00
9	3293.40	3299.48	3304.77	3310.84	3315.00	3324.32	3332.35	3339.99	3338.55	3332.16	3323.99	3313.79
10	3293.35	3299.68	3304.85	3310.96	3315.10	3324.52	3332.52	3339.96	3338.51	3331.84	3323.72	3313.56
11	3293.24	3299.87	3304.96	3311.07	3315.19	3324.74	3332.71	3339.88	3338.45	3331.56	3323.44	3313.36
12	3293.14	3300.05	3305.08	3311.19	3315.35	3324.96	3332.87	3339.74	3338.43	3331.26	3323.15	3313.14
13	3293.33	3300.21	3305.19	3311.31	3315.52	3325.18	3333.06	3339.53	3338.46	3330.95	3322.76	3312.92
14	3293.61	3300.34	3305.34	3311.41	3316.11	3325.39	3333.24	3339.30	3338.49	3330.73	3322.57	3312.71
15	3293.87	3300.52	3305.51	3311.52	3316.61	3325.63	3333.46	3339.11	3338.51	3330.48	3321.90	3312.49
16	3294.11	3300.69	3305.69	3311.65	3317.79	3325.86	3333.68	3339.01	3338.42	3330.21	3321.43	3312.27
17	3294.35	3300.88	3305.85	3311.77	3318.51	3326.10	3333.92	3338.92	3338.56	3329.95	3320.98	3312.04
18	3294.58	3301.07	3306.01	3311.94	3319.02	3326.31	3334.20	3338.85	3338.28	3329.64	3320.57	3311.82
19	3294.82	3301.24	3306.17	3312.10	3319.76	3326.52	3334.54	3338.90	3338.20	3329.38	3320.17	3311.55
20	3295.05	3301.41	3306.36	3312.24	3320.21	3326.74	3334.95	3339.06	3338.07	3329.14	3319.82	3311.33
21	3295.26	3301.61	3306.56	3312.40	3320.55	3326.97	3335.35	3339.24	3337.96	3328.90	3319.50	3311.11
22	3295.46	3301.80	3306.75	3312.55	3320.87	3327.18	3335.70	3339.42	3337.77	3328.66	3319.16	3310.89
23	3295.67	3302.00	3306.95	3312.75	3321.21	3327.40	3336.05	3339.55	3337.55	3328.40	3318.79	3310.68
24	3295.90	3302.15	3307.19	3312.94	3321.49	3327.63	3336.38	3339.69	3337.22	3328.15	3318.42	3310.46
25	3296.17	3302.28	3307.74	3313.08	3321.75	3327.99	3336.74	3339.84	3336.88	3327.88	3318.04	3310.29
26	3296.41	3302.43	3308.24	3313.21	3321.98	3328.57	3337.07	3340.00	3336.50	3327.64	3317.65	3310.16
27	3296.63	3302.62	3308.58	3313.43	3322.21	3328.88	3337.45	3340.03	3336.12	3327.40	3317.29	3310.06
28	3296.84	3302.81	3308.83	3313.60	3322.42	3329.21	3337.77	3339.95	3335.79	3327.16	3316.95	3309.97
29	3297.06	3303.00	3309.05	3313.77	---	3329.56	3338.07	3339.81	3335.47	3326.85	3316.58	3309.85
30	3297.27	3303.14	3309.24	3313.93	---	3329.89	3338.32	3339.67	3335.14	3326.58	3316.21	3309.77
31	3297.49	---	3309.43	3314.04	---	3330.20	---	3339.56	---	3326.31	3315.89	---
MEAN	3294.75	3300.56	3306.04	3311.78	3317.59	3326.05	3334.04	3339.47	3337.96	3330.53	3321.28	3312.40
MAX	3297.49	3303.14	3309.43	3314.04	3322.42	3330.20	3338.32	3340.03	3339.41	3334.85	3325.99	3315.55
MIN	3293.14	3297.71	3303.29	3309.61	3314.12	3322.65	3330.49	3338.57	3335.14	3326.31	3315.89	3309.77
(†)	7430	11100	16390	21150	31440	42850	56780	59090	51070	36940	23250	16720
(‡)	+1580	+3670	+5290	+4760	+10290	+11410	+13930	+2310	-8020	-14130	-13690	-6550

CAL YR 1980 MEAN 3318.05 MAX 3340.04 MIN 3293.14 AC-FT‡ +3920
WTR YR 1981 MEAN 3319.35 MAX 3340.03 MIN 3293.14 AC-FT‡ +10870

† Contents in acre-feet, at 2400, on last day of month.
‡ Change in contents in acre-feet.

13217500 NORTH FORK MALHEUR RIVER AT BEULAH, OR

LOCATION.--Lat 43°54'28", long 118°09'08", in NW¼NE¼ sec.22, T.19 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on left bank at Beulah, 0.3 mi (0.5 km) downstream from Agency Valley Dam, 12 mi (19 km) northwest of Juntura, and at mile 14.5 (23.3 km).

DRAINAGE AREA.--440 mi^2 (1,140 km^2), approximately.

PERIOD OF RECORD.--June 1926 to current year. Published as "near Beulah" June 1926 to September 1935.

REVISED RECORDS.--WSP 1397: 1927-32, 1934, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,261.20 ft (994.014 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 25, 1926, water-stage recorder at site 1 mi (2 km) downstream at different datum. Apr. 25, 1936, to Sept. 30, 1949, nonrecording gage at site 20 ft (6 m) downstream at datum 1.0 ft (0.3 m) higher. Oct. 1, 1949, to June 30, 1964, at present site at datum 1.0 ft (0.3 m) higher.

REMARKS.--Records good. Flow regulated since 1935 by Beulah Reservoir (see station 13217000). Diversions for irrigation above station.

AVERAGE DISCHARGE.--46 years (water years 1936-81), 138 ft^3/s (3.908 m^3/s), 99,980 acre-ft/yr (123 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft^3/s (198 m^3/s) May 7, 1942, gage height, 8.4 ft (2.56 m) from floodmark, caused by failure of gates at Agency Valley Dam, from rating curve extended above 1,100 ft^3/s (31.2 m^3/s) on basis of computation of peak flow over dam; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 398 ft^3/s (11.3 m^3/s) June 25, gage height, 3.61 ft (1.100 m); minimum, 0.07 ft^3/s (0.002 m^3/s) Dec. 18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	.22	.10	.11	.09	.12	.35	6.6	317	312	247	193
2	98	.20	.15	.11	.09	.12	.49	6.4	300	336	243	170
3	98	.17	.18	.11	.10	.12	.53	6.3	248	355	212	162
4	98	.17	.14	.11	.10	.12	.54	27	228	354	195	145
5	97	.16	.11	.11	.10	.13	.73	42	229	354	197	135
6	89	.19	.11	.10	.10	.12	.85	44	231	353	201	135
7	58	.18	.09	.10	.10	.25	.94	45	233	326	200	135
8	60	.17	.09	.10	.10	.35	1.0	64	233	307	212	135
9	57	.14	.09	.10	.10	.55	1.1	92	231	308	224	135
10	68	.14	.09	.10	.10	.77	1.3	136	186	290	223	135
11	83	.13	.10	.09	.09	.93	1.4	210	152	282	223	135
12	83	.14	.10	.09	.10	.96	1.4	297	140	281	237	132
13	29	.13	.10	.10	.11	.92	1.6	362	124	258	265	132
14	4.7	.14	.10	.10	.16	.93	1.6	362	124	242	294	132
15	4.8	.14	.11	.10	.12	1.0	1.5	328	125	242	346	132
16	4.9	.14	.10	.09	.14	.97	1.6	279	129	243	343	130
17	4.3	.13	.10	.09	.12	.96	1.8	258	160	243	315	130
18	2.2	.13	.09	.10	.12	.91	1.7	237	177	247	285	130
19	1.8	.13	.09	.10	.12	.92	1.9	208	184	246	277	130
20	1.4	.13	.09	.10	.11	.90	2.6	141	191	221	257	128
21	1.1	.12	.10	.10	.11	.68	3.2	104	191	207	225	128
22	1.0	.14	.11	.10	.11	.64	3.5	104	231	208	239	128
23	.81	.14	.09	.12	.11	.54	4.7	106	299	231	251	128
24	.64	.13	.10	.11	.12	.50	4.5	106	363	228	247	128
25	.83	.11	.33	.09	.12	.68	4.4	106	376	219	245	114
26	.73	.11	.20	.09	.12	.59	4.5	106	395	220	244	104
27	.56	.11	.15	.10	.12	.38	4.5	171	355	221	231	108
28	.43	.11	.13	.12	.12	.35	4.2	280	365	210	219	102
29	.36	.11	.13	.11	---	.52	4.0	316	341	234	215	98
30	.28	.11	.12	.10	---	.35	6.4	318	314	251	215	85
31	.25	---	.11	.10	---	.32	---	317	---	247	207	---
TOTAL	1047.09	4.27	3.70	3.15	3.10	17.60	68.83	5185.3	7172	8276	7534	3914
MEAN	33.8	.14	.12	.10	.11	.57	2.29	167	239	267	243	130
MAX	98	.22	.33	.12	.16	1.0	6.4	362	395	355	346	193
MIN	.25	.11	.09	.09	.09	.12	.35	6.3	124	207	195	85
AC-FT	2080	8.5	7.3	6.2	6.1	35	137	10290	14230	16420	14940	7760

CAL YR 1980 TOTAL 57519.54 MEAN 157 MAX 1080 MIN .09 AC-FT 114100
WTR YR 1981 TOTAL 33229.04 MEAN 91.0 MAX 395 MIN .09 AC-FT 65910

13226500 BULLY CREEK AT WARMSPRINGS, NEAR VALE, OR

LOCATION.--Lat 44°01'10", long 117°27'35", in SE¼NW¼ sec.9, T.18 S., R.43 E., Malheur County, Hydrologic Unit 17050118, on left bank 400 ft (122 m) downstream from Cottonwood Creek, 4.7 mi (7.6 km) upstream from Bully Creek Dam, 11.4 mi (18.3 km) northwest of Vale, and at mile 17.2 (27.7 km).

DRAINAGE AREA.--539 mi² (1,396 km²).

PERIOD OF RECORD.--September 1903 to February 1904, February 1905 to March 1907, February 1910, January 1911 to May 1917, March 1922 to June 1923, October 1963 to current year. Monthly discharge only for some periods, published in WSP 1317. Published as "near Vale" 1903, 1907, and as "above Vale" 1904-6, 1910.

REVISED RECORDS.--WSP 1317: Drainage area (former site). WSP 1397: 1904-6, 1911, 1914, 1915.

GAGE.--Water-stage recorder. Datum of gage is 2,527.21 ft (770.294 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to July 1, 1923, nonrecording gages within 0.5 mi (0.8 km) downstream at different datums.

REMARKS.--Records good. No regulation. Many diversions for irrigation above station.

AVERAGE DISCHARGE.--24 years (water years 1906, 1912-16, 1964-81), 42.1 ft³/s (1.192 m³/s), 30,500 acre-ft/yr (37.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,800 ft³/s (362 m³/s) Dec. 22, 1964, gage height, 8.68 ft (2.646 m), from rating curve extended above 200 ft³/s (5.66 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 600 ft³/s (17.0 m³/s) and maximum discharge, 4,220 ft³/s (120 m³/s) Feb. 16, gage height, 5.46 ft (1.664 m); minimum recorded, 0.65 ft³/s (0.018 m³/s) Aug. 8-10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	7.5	10	24	21	72	103	14	9.0	12	.92	1.2
2	2.9	8.5	11	23	20	71	102	11	9.0	11	.88	1.7
3	3.5	8.0	13	21	20	69	95	11	10	9.0	.84	1.6
4	3.5	8.5	15	20	22	58	83	10	16	7.9	1.1	1.3
5	3.5	9.0	17	20	22	64	80	7.5	16	6.3	1.2	1.2
6	3.5	11	15	20	23	55	83	6.4	18	8.7	1.0	1.4
7	3.5	13	13	20	21	49	56	5.8	20	11	.77	1.8
8	3.6	11	11	20	21	43	38	6.6	27	10	.76	1.6
9	4.2	10	11	19	22	38	32	6.0	27	8.5	.72	1.3
10	3.9	11	11	19	26	34	36	5.5	23	7.2	.77	1.2
11	3.6	11	11	16	21	31	39	5.0	19	6.0	.86	1.7
12	3.9	10	11	15	21	28	35	5.0	29	5.0	.92	2.0
13	4.2	11	11	14	25	26	42	5.0	47	4.3	.93	1.7
14	6.5	10	11	14	434	24	38	5.0	42	3.8	1.1	1.2
15	5.7	9.0	12	13	458	23	35	5.0	34	3.2	1.6	1.1
16	7.5	9.0	12	13	836	23	29	5.0	33	2.8	1.7	1.2
17	6.5	9.0	12	13	1110	23	35	5.5	34	2.5	1.8	1.4
18	7.0	9.0	12	14	323	23	24	10	33	2.3	1.9	1.6
19	7.0	9.0	12	15	449	23	29	55	32	2.1	1.7	1.6
20	7.0	9.0	13	15	382	23	29	114	34	2.0	1.4	3.0
21	8.0	9.0	14	15	214	23	24	159	32	1.8	1.2	4.4
22	8.0	9.0	15	16	177	23	23	64	31	1.7	1.1	4.4
23	8.0	9.0	20	19	160	23	17	44	31	1.6	.87	3.8
24	8.5	9.0	25	38	143	25	17	35	29	1.4	.82	1.9
25	9.6	9.0	110	28	124	40	15	38	28	1.3	.98	1.9
26	10	8.0	102	23	103	85	18	30	29	1.2	1.8	1.7
27	9.6	8.0	47	22	87	114	20	13	24	1.2	2.6	1.8
28	9.0	8.0	34	27	78	68	15	9.0	18	1.1	2.7	2.0
29	9.0	8.0	30	27	---	88	16	9.0	16	1.0	2.7	1.9
30	8.5	11	27	25	---	171	16	9.0	15	1.0	2.3	1.8
31	8.5	---	25	23	---	105	---	11	---	.95	1.7	---
TOTAL	190.2	281.5	693	611	5363	1565	1224	719.3	765.0	139.85	41.64	56.4
MEAN	6.14	9.38	22.4	19.7	192	50.5	40.8	23.2	25.5	4.51	1.34	1.88
MAX	10	13	110	38	1110	171	103	159	47	12	2.7	4.4
MIN	2.5	7.5	10	13	20	23	15	5.0	9.0	.95	.72	1.1
AC-FT	377	558	1370	1210	10640	3100	2430	1430	1520	277	83	112

CAL YR 1980 TOTAL 23506.15 MEAN 63.7 MAX 2030 MIN .69 AC-FT 46230
WTR YR 1981 TOTAL 11649.89 MEAN 31.9 MAX 1110 MIN .72 AC-FT 23110

13226800 BULLY CREEK RESERVOIR NEAR VALE, OR

LOCATION.--Lat 44°00'55", long 117°23'45", in SE¼SW¼ sec.12, T.18 S., R.43 E., Malheur County, Hydrologic Unit 17050118, U.S. Bureau of Reclamation land, on top of dam over outlet works near right end of dam on Bully Creek, 8.0 mi (12.9 km) northwest of Vale, and at mile 12.5 (20.1 km).

DRAINAGE AREA.--547 mi² (1,417 km²).

PERIOD OF RECORD.--February 1963 to current year. Prior to March 1979, monthend contents only.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum). Prior to Mar. 22, 1979, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill, rock-faced dam. Storage began Feb. 1, 1963. Capacity, 29,980 acre-ft (37.0 hm³) between elevations 2,456.58 ft (748.766 m), outlet works, and 2,516.00 ft (766.877 m), spillway crest. Dead storage, 1,650 acre-ft (2.03 hm³) below elevation 2,456.58 ft (748.766 m). Figures given herein do not include dead storage. Water used for irrigation lands of Vale-Oregon Irrigation District. Bully Creek Reservoir feed canal diverts from Malheur River by way of Vale Oregon canal.

COOPERATION.--Capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents not determined, occurred during period Apr. 4 to May 2, 1969, elevation above 2,516.00 ft (766.877 m), spillway crest; no usable contents at times in 1973, 1977, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 29,480 acre-ft (36.3 hm³) Apr. 22, elevation, 2,515.49 ft (766.721 m); minimum, 8,780 acre-ft (10.8 hm³) Sept. 30, elevation, 2,487.83 ft (758.291 m).

Capacity table (elevation, in feet, and contents, in acre-feet)

2,484	7,000	2,505	20,130
2,490	9,930	2,510	24,370
2,495	12,900	2,520	34,040
2,500	16,290		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2492.21	2490.99	2492.28	2494.87	2497.44	2512.02	2513.30	2514.96	2514.41	2511.19	2503.72	2494.60
2	2492.12	2491.02	2492.42	2494.95	2497.55	2512.17	2513.50	2514.81	2514.33	2510.98	2503.44	2494.32
3	2492.02	2491.05	2492.50	2495.03	2497.65	2512.31	2513.68	2514.69	2514.31	2510.75	2503.18	2494.03
4	2491.91	2491.07	2492.55	2495.10	2497.73	2512.41	2513.83	2514.54	2514.24	2510.51	2502.89	2493.72
5	2491.73	2491.10	2492.62	2495.17	2497.84	2512.51	2513.97	2514.42	2514.16	2510.23	2502.58	2493.43
6	---	2491.15	2492.67	2495.24	2498.00	2512.62	2514.12	2514.25	2514.04	2509.95	2502.28	2493.13
7	---	2491.21	2492.68	2495.31	2498.16	2512.74	2514.23	2514.13	2513.97	2509.69	2501.99	2492.86
8	---	2491.24	2492.72	2495.37	2498.32	2512.82	2514.33	2514.04	2513.93	2509.49	2501.69	2492.61
9	---	2491.28	2492.74	2495.43	2498.49	2512.89	2514.38	2513.95	2513.94	2509.27	2501.38	2492.39
10	---	2491.31	2492.78	2495.49	2498.56	2512.93	2514.47	2513.81	2513.92	2508.98	2501.09	2492.12
11	---	2491.34	2492.82	2495.55	2498.67	2512.97	2514.56	2513.65	2513.84	2508.76	2500.80	2491.89
12	---	2491.37	2492.86	2495.60	2498.81	2513.00	2514.60	2513.55	2513.81	2508.51	2500.51	2491.65
13	---	2491.40	2492.88	2495.66	2498.99	2513.01	2514.69	2513.46	2513.83	2508.22	2500.22	2491.42
14	---	2491.43	2492.93	2495.70	2500.05	2513.02	2514.79	2513.33	2513.85	2507.98	2499.89	2491.19
15	---	2491.47	2492.98	2495.75	2501.28	2513.06	2514.88	2513.21	2513.85	2507.76	2499.58	2490.95
16	---	2491.51	2493.02	2495.82	2503.59	2513.01	2514.94	2513.12	2513.75	2507.53	2499.29	2490.72
17	---	2491.57	2493.06	2495.87	2506.34	2513.00	2515.11	2513.07	2513.70	2507.30	2498.97	2490.51
18	---	2491.62	2493.09	2495.94	2507.54	2513.00	2515.22	2513.02	2513.62	2507.05	2498.65	2490.30
19	---	2491.66	2493.14	2495.99	2508.89	2513.01	2515.33	2513.11	2513.52	2506.81	2498.34	2490.03
20	---	2491.70	2493.20	2496.05	2509.72	2513.04	2515.41	2513.38	2513.37	2506.55	2498.03	2489.80
21	---	2491.76	2493.28	2496.10	2510.15	2513.06	2515.43	2513.83	2513.25	2506.29	2497.72	2489.56
22	---	2491.81	2493.33	2496.16	2510.50	2513.05	2515.41	2514.10	2513.10	2506.06	2497.43	2489.32
23	---	2491.91	2493.38	2496.29	2510.82	2513.06	2515.38	2514.28	2512.93	2505.84	2497.13	2489.09
24	---	2491.94	2493.50	2496.41	2511.08	2513.07	2515.30	2514.42	2512.75	2505.58	2496.86	2488.86
25	---	2491.97	2493.79	2496.49	2511.31	2513.11	2515.29	2514.51	2512.55	2505.35	2496.59	2488.66
26	---	2492.01	2494.15	2496.56	2511.52	2513.17	2515.26	2514.56	2512.30	2505.14	2496.32	2488.48
27	---	2492.07	2494.34	2496.69	2511.71	2513.06	2515.26	2514.55	2512.05	2504.94	2496.04	2488.30
28	---	2492.13	2494.48	2496.84	2511.87	2512.85	2515.25	2514.53	2511.89	2504.72	2495.78	2488.16
29	2490.91	2492.18	2494.59	2497.05	---	2512.68	2515.20	2514.52	2511.70	2504.44	2495.50	2488.00
30	2490.93	2492.23	2494.69	2497.21	---	2512.90	2515.11	2514.45	2511.46	2504.22	2495.18	2487.83
31	2490.96	---	2494.79	2497.32	---	2513.14	---	2514.44	---	2503.98	2494.90	---
MEAN	---	2491.55	2493.23	2495.90	2503.66	2512.86	2514.74	2514.02	2513.41	2507.55	2499.29	2490.93
MAX	---	2492.23	2494.79	2497.32	2511.87	2513.17	2515.43	2514.96	2514.41	2511.19	2503.72	2494.60
MIN	---	2490.99	2492.28	2494.87	2497.44	2512.02	2513.30	2513.02	2511.46	2503.98	2494.90	2487.83
(†)	10470	11210	12770	14420	26050	27230	29110	28460	25680	19310	12840	8780
(‡)	-750	+740	+1,560	+1650	+11630	+1180	+1880	-650	-2780	-6370	-6470	-4060

CAL YR 1980 MEAN - MAX - MIN - AC-FT‡ +1860
WTR YR 1981 MEAN - MAX 2515.43 MIN 2487.83 AC-FT‡ -2440

† Contents in acre-feet, at 2400, on last day of month.
‡ Change in contents in acre-feet.

13270800 SOUTH FORK BURNT RIVER ABOVE BARNEY CREEK, NEAR UNITY, OR

LOCATION.--Lat 44°24'25", long 118°18'01", in NW¼SE¼ sec.28, T.13 S., R.36 E., Baker County, Hydrologic Unit 17050202, Wallowa Whitman National Forest, on right bank 84 ft (26 m) upstream from Barney Creek and 6 mi (10 km) southwest of Unity.

DRAINAGE AREA.--38.5 mi^2 (99.7 km^2).

PERIOD OF RECORD.--March 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,341.75 ft (1,323.365 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to July 18, 1963, nonrecording gage at site 222 ft (68 m) upstream at datum 5.47 ft (1.667 m) higher, July 18, 1963, to July 18, 1979, at site 216 ft (66 m) upstream at datum 5.313 ft (1.619 m) higher.

REMARKS.--Records excellent. No regulation or diversion above station.

AVERAGE DISCHARGE.--18 years, 27.2 ft^3/s (0.770 m^3/s), 19,710 acre-ft/yr (24.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 186 ft^3/s (5.27 m^3/s) Apr. 29, 1965, gage height, 1.98 ft (0.604 m), site and datum then in use; maximum gage height, 3.57 ft (1.088 m) Jan. 10, 1974 (backwater from ice), site and datum then in use; minimum discharge, 11 ft^3/s (0.31 m^3/s) Feb. 12, 1978, but may have been less during period of no gage-height record Nov. 20 to Dec. 5, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 57 ft^3/s (1.61 m^3/s) Apr. 23, gage height, 3.32 ft (1.012 m); minimum, 16 ft^3/s (0.45 m^3/s) Feb. 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	22	22	23	19	22	27	50	31	26	24	21
2	22	22	26	23	19	21	26	50	30	26	24	21
3	22	22	27	23	20	22	26	44	30	25	24	20
4	22	22	28	23	19	22	26	41	29	25	24	21
5	22	22	24	23	21	21	26	37	29	25	24	20
6	22	24	23	22	20	21	26	36	30	26	24	21
7	22	24	21	22	19	21	26	34	29	27	23	20
8	22	23	20	22	20	21	26	33	32	26	23	20
9	22	23	21	22	20	21	26	32	30	25	23	20
10	22	23	22	22	19	22	26	31	30	25	22	20
11	22	23	22	22	20	22	26	30	29	25	21	20
12	23	22	22	21	20	22	26	30	31	25	21	20
13	23	22	22	20	19	23	26	29	30	25	22	20
14	23	22	22	20	21	23	26	32	29	24	22	20
15	23	23	22	20	20	24	28	31	28	24	21	20
16	23	22	22	19	23	24	29	30	29	24	21	20
17	23	22	22	20	22	24	30	29	28	24	21	20
18	23	22	21	19	24	23	33	32	28	24	22	20
19	23	22	21	19	26	23	44	33	28	24	22	20
20	23	22	21	19	24	23	47	37	28	24	22	20
21	23	23	22	20	23	23	45	38	28	24	21	20
22	22	23	22	20	23	24	42	38	27	24	21	21
23	22	23	22	20	23	23	46	37	27	24	21	21
24	22	22	22	20	23	24	54	37	26	24	21	21
25	23	23	26	20	22	26	51	37	26	24	21	22
26	23	22	27	20	22	27	49	36	26	24	21	22
27	22	23	25	20	22	26	44	35	26	24	21	23
28	22	23	24	20	22	26	42	34	26	24	21	22
29	22	23	23	20	---	28	43	33	26	24	21	22
30	22	23	23	20	---	27	46	33	26	24	21	22
31	22	---	23	20	---	27	---	32	---	24	21	---
TOTAL	694	677	710	644	595	726	1038	1091	852	763	681	620
MEAN	22.4	22.6	22.9	20.8	21.3	23.4	34.6	35.2	28.4	24.6	22.0	20.7
MAX	23	24	28	23	26	28	54	50	32	27	24	23
MIN	22	22	20	19	19	21	26	29	26	24	21	20
AC-FT	1380	1340	1410	1280	1180	1440	2060	2160	1690	1510	1350	1230

CAL YR 1980 TOTAL 9924 MEAN 27.1 MAX 61 MIN 15 AC-FT 19680
WTR YR 1981 TOTAL 9091 MEAN 24.9 MAX 54 MIN 19 AC-FT 18030

13272500 UNITY RESERVOIR NEAR UNITY, OR

LOCATION.--Lat 44°30'13", long 118°10'45", in SE¼SW¼ sec.21, T.12 S., R.37 E., Baker County, Hydrologic Unit 17050202, at spillway near right end of dam on Burnt River, 4.4 mi (7.1 km) north of Unity, and at mile 63.6 (102.3 km).

DRAINAGE AREA.--309 mi² (800 km²).

PERIOD OF RECORD.--March 1938 to current year. Prior to September 1978, monthend contents only.

GAGE.-- Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Mar. 13, 1938, to Nov. 4, 1941, reference mark or mercury pressure gage and Nov. 5, 1941, to Dec. 10, 1978, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway and outlet works, completed by Bureau of Reclamation in 1937; storage began Feb. 19, 1938. Capacity, 25,200 acre-ft (31.1 hm³) between elevations 3,776.5 ft (1,151.08 m), bottom of outlet gates, and 3,820.0 ft (1,164.34 m), top of radial gates on spillway when closed. Dead storage, 600 acre-ft (740,000 m³) below elevations 3,776.5 ft (1,151.08 m). Records given herin represent usable contents. Water used for irrigation in the Burnt River Irrigation District near Hereford and Bridgeport.

COOPERATION.--Data for computing capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 26,770 acre-ft (33.0 hm³) Apr. 8, 1971, elevation, 3,821.62 ft (1,164.830 m); no contents Sept. 5 to Oct. 4, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 25,730 acre-ft (31.7 hm³) Apr. 27, elevation, 3,820.56 ft (1,164.507 m); minimum, 5,210 acre-ft (6.42 hm³) Sept. 30, elevation, 3,792.41 ft (1,155.926 m).

Capacity table (elevation, in feet, and usable contents, in acre-feet)

3,790	4,020	3,805	12,960	3,820	25,220
3,795	6,610	3,810	16,680	3,821	26,150
3,800	9,600	3,815	20,770		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3802.50	3804.10	3807.53	3810.46	3812.94	3817.89	3819.92	3820.36	3819.52	3817.85	3811.28	3802.09
2	3802.38	3804.22	3807.69	3810.57	3812.99	3817.92	3819.84	3820.32	3819.45	3817.72	3811.01	3801.80
3	3802.31	3804.33	3807.89	3810.66	3813.05	3818.02	3819.76	3820.25	3819.42	3817.59	3810.71	3801.51
4	3802.27	3804.42	3808.06	3810.75	3813.12	3818.05	3819.71	3820.13	3819.36	3817.43	3810.46	3801.16
5	3802.24	3804.52	3808.24	3810.82	3813.21	3818.13	3819.65	3820.04	3819.32	3817.23	3810.21	3800.80
6	3802.21	3804.66	3808.29	3810.90	3813.26	3818.14	3819.65	3819.95	3819.29	3817.05	3809.95	3800.43
7	3802.18	3804.83	3808.20	3810.98	3813.31	3818.19	3819.66	3819.97	3819.27	3816.93	3809.65	3800.07
8	3802.17	3804.99	3808.14	3811.07	3813.36	3818.25	3819.68	3820.00	3819.32	3816.84	3809.36	3799.73
9	3802.15	3805.12	3808.17	3811.16	3813.42	3818.36	3819.71	3820.01	3819.41	3816.72	3809.06	3799.39
10	3802.18	3805.23	3808.23	3811.23	3813.46	3818.50	3819.71	3819.92	3819.44	3816.54	3808.77	3799.05
11	3802.22	3805.36	3808.26	3811.31	3813.53	3818.69	3819.69	3819.87	3819.42	3816.40	3808.47	3798.71
12	3802.24	3805.47	3808.33	3811.37	3813.59	3818.94	3819.66	3819.85	3819.42	3816.22	3808.17	3798.36
13	3802.30	3805.56	3808.34	3811.44	3813.69	3819.19	3819.67	3819.79	3819.49	3816.05	3807.86	3798.01
14	3802.36	3805.67	3808.45	3811.49	3813.82	3819.42	3819.70	3819.74	3819.53	3815.92	3807.57	3797.65
15	3802.42	3805.78	3808.51	3811.56	3814.03	3819.61	3819.76	3819.71	3819.56	3815.78	3807.26	3797.30
16	3802.50	3805.90	3808.54	3811.64	3814.41	3819.76	3819.84	3819.66	3819.50	3815.63	3806.96	3796.94
17	3802.60	3806.00	3808.58	3811.72	3814.85	3819.81	3819.97	3819.63	3819.47	3815.46	3806.64	3796.58
18	3802.70	3806.13	3808.64	3811.80	3815.32	3819.82	3820.12	3819.61	3819.45	3815.21	3806.31	3796.24
19	3802.80	3806.24	3808.68	3811.87	3816.00	3819.75	3820.26	3819.68	3819.37	3814.97	3806.01	3795.85
20	3802.91	3806.35	3808.73	3811.95	3816.47	3819.71	3820.43	3819.72	3819.28	3814.73	3805.71	3795.50
21	3802.98	3806.48	3808.80	3812.03	3816.82	3819.70	3820.50	3819.74	3819.20	3814.48	3805.41	3795.14
22	3803.06	3806.59	3808.87	3812.11	3817.18	3819.78	3820.43	3819.73	3819.09	3814.22	3805.10	3794.76
23	3803.16	3806.72	3808.90	3812.24	3817.52	3819.87	3820.44	3819.73	3818.95	3813.96	3804.79	3794.37
24	3803.28	3806.81	3809.00	3812.31	3817.74	3819.89	3820.50	3819.75	3818.82	3813.69	3804.51	3795.96
25	3803.37	3806.92	3809.13	3812.39	3817.86	3820.17	3820.48	3819.82	3818.71	3813.41	3804.21	3793.55
26	3803.47	3807.03	3809.31	3812.46	3817.92	3820.52	3820.44	3819.82	3818.53	3813.14	3803.91	3793.23
27	3803.58	3807.12	3809.58	3812.58	3817.92	3820.39	3820.42	3819.78	3818.35	3812.86	3803.61	3792.98
28	3803.68	3807.21	3809.83	3812.68	3817.90	3820.14	3820.35	3819.73	3818.23	3812.54	3803.32	3792.76
29	3803.78	3807.31	3810.02	3812.76	---	3819.90	3820.32	3819.65	3818.15	3812.18	3803.02	3792.56
30	3803.87	3807.40	3810.18	3812.84	---	3819.86	3820.30	3819.61	3817.98	3811.89	3802.68	3792.41
31	3803.99	---	3810.33	3812.89	---	3819.87	---	3819.56	---	3811.62	3802.40	---
MEAN	3802.77	3805.82	3808.69	3811.68	3814.95	3819.23	3820.02	3819.84	3819.14	3815.23	3806.92	3797.10
MAX	3803.99	3807.40	3810.33	3812.89	3817.92	3820.52	3820.50	3820.36	3819.56	3817.85	3811.28	3802.09
MIN	3802.15	3804.10	3807.53	3810.46	3812.94	3817.89	3819.65	3819.56	3817.98	3811.62	3802.40	3792.41
(†)	12250	14700	16930	18990	23320	25090	25490	24810	23590	17960	11170	5210
(‡)	+940	+2450	+2230	+2060	+4330	+1770	+400	-680	-1420	-5430	-6790	-5960

CAL YR 1980 MEAN 3811.00 MAX 3820.45 MIN 3796.83 AC-FT‡ +9340
WTR YR 1981 MEAN 3811.77 MAX 3820.52 MIN 3792.41 AC-FT‡ -6100

† Contents in acre-feet, at 2400, on last day of month.
‡ Change in contents, in acre-feet.

13273000 BURNT RIVER NEAR HEREFORD, OR

LOCATION.--Lat 44°30'14", long 118°10'35", in SE¼ sec.21, T.12 S., R.37 E., Baker County, Hydrologic Unit 17050202, on left bank 800 ft (244 m) downstream from Unity Dam, 0.4 mi (0.6 km) upstream from Van Cleve ditch, 7 mi (11 km) west of Hereford, and at mile 63.5 (102.2 km).

DRAINAGE AREA.--309 mi² (800 km²).

PERIOD OF RECORD.--March to September 1915, April to September 1916, October 1928 to current year. Monthly discharge only for some periods, published in WSP 1317.

REVISED RECORDS.--WSP 903: 1939. WSP 1397: 1916, 1930, 1930(M).

GAGE.--Water-stage recorder. Datum of gage is 3,758.19 ft (1,145.496 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1943, to Oct. 31, 1966, water-stage recorder at site 450 ft (137 m) downstream at datum 1.44 ft (0.439 m) lower. See WSP 1317 or 1737 for history of changes prior to Oct. 1, 1943.

REMARKS.--Records excellent except those for period of backwater Oct. 1 to Nov. 24, which are fair. Flow regulated since 1938 by Unity Reservoir (see station 13272500). Diversions for irrigation above station.

AVERAGE DISCHARGE.--53 years (water years 1929-81), 83.2 ft³/s (2.356 m³/s), 60,280 acre-ft/yr (74.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,220 ft³/s (62.9 m³/s) Apr. 17, 1943, gage height, 5.91 ft (1.801 m), present datum, from rating curve extended above 1,300 ft³/s (36.8 m³/s); maximum gage height, 6.41 ft (1.954 m), present datum, Apr. 16, 1943, just before concrete control washed out; no flow at times; minimum discharge before construction of Unity Dam, 1.6 ft³/s (0.045 m³/s) Aug. 31, 1935.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 439 ft³/s (12.4 m³/s) Mar. 27, gage height, 5.78 ft (1.762 m); minimum, 1.00 ft³/s (0.028 m³/s) Nov. 16, 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	7.9	5.2	28	21	135	244	250	90	79	139	111
2	60	7.9	3.7	35	20	126	265	249	80	79	138	111
3	43	9.5	9.3	39	21	116	246	243	77	85	133	110
4	30	12	8.9	37	21	115	218	214	67	88	122	122
5	30	9.2	5.4	34	21	113	198	203	82	89	122	127
6	30	9.5	8.6	31	21	111	174	171	83	86	129	126
7	25	9.9	72	28	21	109	163	127	83	79	134	125
8	23	7.6	63	23	21	100	154	119	73	74	133	122
9	14	6.7	30	23	18	92	153	115	66	80	133	113
10	7.7	5.9	25	23	18	92	151	115	66	87	133	114
11	7.2	5.2	25	22	20	92	150	107	73	87	131	116
12	5.9	4.2	27	21	20	92	149	97	67	87	131	116
13	6.0	3.4	23	20	20	96	137	117	66	87	130	115
14	6.0	2.7	26	20	19	120	130	120	65	87	129	114
15	6.0	2.3	36	21	20	141	129	116	65	86	129	113
16	7.5	2.1	33	19	21	154	130	116	65	86	128	111
17	7.9	1.9	28	20	22	171	142	116	71	94	128	110
18	8.4	2.1	28	19	22	181	168	114	78	115	127	109
19	8.5	2.3	33	18	24	181	227	105	78	115	126	109
20	8.8	2.4	33	18	23	169	294	100	78	115	126	108
21	9.3	2.5	32	19	23	162	332	96	78	115	124	107
22	9.8	2.7	30	21	23	162	332	108	82	122	123	107
23	10	2.9	30	22	24	171	332	102	95	126	122	106
24	10	2.4	30	21	61	178	332	92	96	126	121	105
25	11	1.8	29	20	106	190	348	86	92	126	116	103
26	11	3.5	29	21	116	339	369	93	92	126	116	102
27	12	14	30	21	123	425	366	98	88	133	115	94
28	12	13	30	21	137	429	329	98	84	148	114	81
29	12	12	38	22	---	399	290	98	80	146	114	69
30	8.6	9.3	33	21	---	274	250	97	80	139	114	61
31	6.6	---	35	21	---	240	---	96	---	139	113	---
TOTAL	507.2	178.8	869.1	729	1027	5475	6902	3978	2340	3231	3893	3237
MEAN	16.4	5.96	28.0	23.5	36.7	177	230	128	78.0	104	126	108
MAX	60	14	72	39	137	429	369	250	96	148	139	127
MIN	5.9	1.8	3.7	18	18	92	129	86	65	74	113	61
AC-FT	1010	355	1720	1450	2040	10860	13690	7890	4640	6410	7720	6420

CAL YR 1980 TOTAL 24142.4 MEAN 66.0 MAX 366 MIN 1.8 AC-FT 47890
WTR YR 1981 TOTAL 32367.1 MEAN 88.7 MAX 429 MIN 1.8 AC-FT 64200

13275300 POWDER RIVER NEAR SUMPTER, OR

LOCATION.--Lat 44°40'20", long 117°59'40", in NE¼NE¼ sec.25, T.10 S., R.38 E., Baker County, Hydrologic Unit 17050203, Wallowa Whitman National Forest, on left bank 1,200 ft (366 m) downstream from Mason Dam, 1.4 mi (2.3 km) upstream from California Gulch, 11.4 mi (18.3 km) southeast of Sumpter, and at mile 123.2 (198.2 km).

DRAINAGE AREA.--168 mi^2 (435 km^2), approximately. Prior to Oct. 1, 1970, 170 mi^2 (440 km^2) at cableway, 0.5 mi (0.8 km) downstream.

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

GAGE.--Water-stage recorder. Datum of gage is 3,898.47 ft (1,188.254 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to July 29, 1965, nonrecording gage at datum 1.03 ft (0.314 m) higher.

REMARKS.--Records good. Flow completely regulated since Oct. 31, 1967, by Phillips Lake, active capacity, 90,540 acre-ft (112 hm^3). Many small diversions for irrigation above station.

AVERAGE DISCHARGE.--16 years, 103 ft^3/s (2.917 m^3/s), 74,620 acre-ft/yr (92.0 hm^3/yr), not adjusted for storage in Phillips Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 971 ft^3/s (27.5 m^3/s) Apr. 30, 1965, gage height, 4.43 ft (1.350 m); no flow Nov. 12, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 1,600 ft^3/s (45.3 m^3/s), approximately, Mar. 20, 1910, based on comparison with records for station downstream, near Baker.

EXTREMES FOR CURRENT YEAR.--Maximum recorded discharge, 423 ft^3/s (12.0 m^3/s) May 7-9, gage height, 3.43 ft (1.045 m); minimum, 2.6 ft^3/s (0.074 m^3/s) Dec. 23, 24.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	21	9.8	7.5	7.5	8.1	11	302	190	190	288	151
2	20	21	9.2	8.6	8.1	8.1	11	335	190	193	281	151
3	19	21	9.2	8.1	6.1	8.6	12	357	193	213	274	151
4	19	21	9.8	8.6	7.5	9.2	12	381	193	225	222	151
5	19	21	9.8	6.6	8.1	9.2	11	394	183	225	201	151
6	19	15	10	7.0	8.6	9.2	9.8	420	178	222	216	149
7	19	9.2	9.8	8.6	8.6	9.2	10	419	165	219	219	149
8	19	9.2	8.8	7.5	8.6	9.2	11	419	150	204	222	149
9	19	9.2	8.8	7.5	8.1	9.8	9.8	398	143	180	222	166
10	19	9.2	8.8	7.0	7.4	9.8	11	330	120	180	219	174
11	19	9.2	8.8	7.0	8.1	9.8	11	246	120	180	219	174
12	19	9.2	8.8	7.0	8.1	9.8	9.8	222	210	180	219	174
13	19	9.2	8.8	7.0	8.1	9.8	10	222	287	195	222	171
14	19	9.2	9.2	7.0	8.6	9.8	9.8	222	314	243	234	171
15	19	9.2	9.8	6.7	8.6	9.8	9.8	225	314	255	219	172
16	20	9.2	10	7.0	9.8	9.8	9.8	225	310	306	260	172
17	20	9.2	10	7.0	9.2	9.8	9.8	225	310	314	340	172
18	20	9.2	11	7.0	9.2	10	10	262	310	290	364	172
19	20	9.2	12	7.0	8.1	11	10	338	310	287	295	170
20	20	9.2	12	7.0	8.6	10	10	362	269	249	267	170
21	20	9.2	12	7.5	9.2	10	10	330	294	228	254	170
22	20	9.2	12	6.6	7.5	9.8	10	216	259	249	243	169
23	20	9.2	5.7	7.0	8.6	10	42	188	237	252	216	146
24	20	9.2	5.2	8.1	8.6	10	74	185	237	225	192	123
25	20	9.2	7.5	7.5	8.1	10	74	213	237	213	192	101
26	20	9.2	6.6	7.0	8.1	11	142	237	225	213	192	71
27	20	9.8	8.1	7.0	7.5	10	259	237	207	216	195	63
28	20	9.2	7.0	8.1	7.5	10	302	210	210	228	198	52
29	20	9.8	8.1	8.6	---	11	302	193	204	231	195	39
30	21	9.8	8.6	7.0	---	11	302	193	190	259	151	24
31	21	---	7.0	7.5	---	11	---	190	---	274	151	---
TOTAL	609	342.6	282.2	228.6	230.1	303.8	1725.6	8696	6759	7138	7182	4218
MEAN	19.6	11.4	9.10	7.37	8.22	9.80	57.5	281	225	230	232	141
MAX	21	21	12	8.6	9.8	11	302	420	314	314	364	174
MIN	19	9.2	5.2	6.6	6.1	8.1	9.8	185	120	180	151	24
AC-FT	1210	680	560	453	456	603	3420	17250	13410	14160	14250	8370

CAL YR 1980 TOTAL 36410.2 MEAN 99.5 MAX 398 MIN 5.2 AC-FT 72220
WTR YR 1981 TOTAL 37714.9 MEAN 103 MAX 420 MIN 5.2 AC-FT 74810

13277000 POWDER RIVER AT BAKER, OR

LOCATION.--Lat 44°46'06", long 117°49'50", in SE¼NE¼ sec.20, T.9 S., R.40 E., Baker County, Hydrologic Unit 17050203, on right bank 600 ft (180 m) upstream from Myrtle Street Bridge in Baker, 0.5 mi (0.8 km) downstream from Sutton Creek, and at mile 107.6 (173.1 km).

DRAINAGE AREA.--351 mi^2 (909 km^2).

PERIOD OF RECORD.--May to September 1913, April to July 1914, November 1971 to current year. Monthly discharge only May 1913, April 1914 published in WSP 1317. November 1971 to September 1978 in reports of Oregon Water Resources Department.

REVISED RECORDS.--WSP 1317: 1913.

GAGE.--Water-stage recorder. Datum of gage is 3,441.71 ft (1,049.033 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 19, 1971, nonrecording gage at site 0.7 mi (1.1 km) downstream at different datum.

REMARKS.--Records excellent. Flow regulated since Oct. 31, 1967, by Phillips Lake, active capacity, 90,540 acre-ft (112 hm^3). Old Settlers Slough diverts from left bank 0.2 mi (0.3 km) upstream for irrigation below station.

AVERAGE DISCHARGE.--9 years, 98.2 ft^3/s (2.781 m^3/s), 71,150 acre-ft/yr (87.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,120 ft^3/s (31.7 m^3/s) Jan. 15, 1974, gage height, 5.55 ft (1.692 m); minimum, 0.7 ft^3/s (0.020 m^3/s) Oct. 28, 29, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 385 ft^3/s (10.9 m^3/s) May 6, gage height, 3.52 ft (1.073 m); minimum, 7.0 ft^3/s (0.20 m^3/s) Feb. 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	24	18	29	20	38	53	278	126	122	180	126
2	20	24	26	28	23	37	50	298	128	122	180	161
3	22	24	38	28	21	36	48	333	123	133	171	166
4	17	24	41	27	20	36	44	352	117	150	161	141
5	17	24	29	26	22	36	37	365	129	152	141	100
6	17	25	24	25	23	33	39	362	169	156	133	97
7	17	22	24	24	22	32	38	357	156	163	141	95
8	17	22	27	24	21	33	37	360	168	144	142	97
9	17	19	28	22	22	32	38	355	158	119	142	97
10	17	18	27	22	20	31	36	282	110	115	138	102
11	17	18	28	28	21	31	32	229	92	114	133	105
12	18	18	28	25	23	30	34	166	144	111	135	105
13	19	16	28	24	25	30	33	155	246	110	135	110
14	22	16	29	22	30	29	32	153	280	161	150	113
15	20	18	30	23	51	29	31	156	278	169	139	113
16	18	17	28	25	160	31	27	148	287	206	164	121
17	17	17	28	24	111	31	24	145	287	233	227	133
18	17	18	28	23	102	29	23	175	278	210	287	133
19	17	18	27	23	163	29	26	261	278	206	274	135
20	18	18	27	23	101	31	35	314	242	185	219	136
21	19	18	28	22	71	33	44	337	253	147	195	138
22	19	20	34	22	61	34	43	233	240	164	178	145
23	18	19	32	25	57	35	50	173	202	186	175	135
24	18	18	27	31	55	35	85	163	199	166	148	110
25	18	16	73	24	52	40	89	173	195	144	123	95
26	20	12	76	22	46	92	123	197	188	142	119	60
27	22	16	55	23	43	70	240	185	161	141	118	55
28	23	20	43	24	40	56	295	166	161	150	117	43
29	23	20	36	26	---	57	280	128	158	155	115	32
30	23	20	34	25	---	55	274	128	133	160	115	22
31	23	---	32	23	---	51	---	131	---	166	117	---
TOTAL	589	579	1033	762	1426	1202	2240	7258	5686	4802	4912	3221
MEAN	19.0	19.3	33.3	24.6	50.9	38.8	74.7	234	190	155	158	107
MAX	23	25	76	31	163	92	295	365	287	233	287	166
MIN	17	12	18	22	20	29	23	128	92	110	115	22
AC-FT	1170	1150	2050	1510	2830	2380	4440	14400	11280	9520	9740	6390

CAL YR 1980 TOTAL 31518 MEAN 86.1 MAX 323 MIN 12 AC-FT 62520
WTR YR 1981 TOTAL 33710 MEAN 92.4 MAX 365 MIN 12 AC-FT 66860

13285000 THIEF VALLEY RESERVOIR NEAR NORTH POWDER, OR

LOCATION.--Lat 45°00'45", long 117°46'50", in NE¼SW¼ sec.26, T.6 S., R.40 E., Baker County, Hydrologic Unit 17050203, Bureau of Reclamation land, on top of right end of dam on Powder River, 7.0 mi (11.3 km) east of North Powder, and at mile 70.0 (112.6 km).

DRAINAGE AREA.--910 mi² (2,357 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Reservoir is formed by concrete dam. Storage began in February 1932. Capacity, 17,400 acre-ft (21.5 hm³) between elevations 3,094.00 ft (943.051 m), minimum pool, and 3,135.00 ft (954.938 m), spillway crest. No dead storage. Water used for irrigation of lands of Lower Powder River Irrigation District.

COOPERATION.--Capacity table furnished by Oregon Water Resources Department.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 18,240 acre-ft (22.5 hm³) June 9, 1981, elevation, 3,134.12 ft (955.280 m); minimum recorded, 4,080 acre-ft (5.03 hm³) Sept. 16, 1981, elevation, 3,109.78 ft (947.861 m); minimum (estimated), 2,190 acre-ft (2.70 hm³) Sept. 30, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 18,240 acre-ft (22.5 hm³) June 9, elevation, 3,134.12 ft (955.280 m); minimum recorded, 4,080 acre-ft (5.03 hm³) Sept. 16, elevation, 3,109.78 ft (947.861 m); minimum (estimated), 2,190 acre-ft (2.70 hm³) Sept. 30.

Capacity table (elevation, in feet, and contents, in acre-feet)

3,104	2,040	3,125	11,880
3,110	4,170	3,130	15,210
3,115	6,370	2,135	18,910
3,120	8,950		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3120.78	3127.14	3133.24	3133.45	3133.36	3133.44	3133.47	3134.02	3133.78	3133.19	3126.90	3115.59
2	3120.90	3127.40	3133.27	3133.44	3133.33	3133.43	3133.46	3134.04	3133.68	3133.18	3126.51	3115.15
3	3121.04	3127.67	3133.44	3133.42	3133.31	3133.42	3133.44	3133.97	3133.63	3133.03	3126.07	3114.61
4	3121.27	3127.96	3133.49	3133.39	3133.31	3133.41	3133.44	3133.91	3133.60	3132.86	3125.74	3114.12
5	3121.42	3128.23	3133.47	3133.38	3133.31	3133.39	3133.40	3133.85	3133.62	3132.64	3125.29	3113.78
6	3121.56	3128.47	3133.37	3133.36	3133.31	3133.39	3133.39	3133.79	3133.77	3132.50	3125.04	3113.44
7	3121.68	3128.82	3133.27	3133.37	3133.30	3133.41	3133.38	3133.77	3133.81	3132.48	3124.53	3113.20
8	3121.77	3129.29	3133.21	3133.35	3133.29	3133.39	3133.39	3133.77	3134.02	3132.55	3124.35	3112.86
9	3121.85	3129.68	3133.19	3133.34	3133.26	3133.39	3133.37	3133.70	3134.09	3132.54	3123.77	3112.55
10	3121.92	3130.01	3133.22	3133.31	3133.19	3133.39	3133.39	3133.63	3134.00	3132.53	3123.39	3112.15
11	3122.03	3130.31	3133.24	3133.33	3133.21	3133.39	3133.38	3133.55	3133.90	3132.40	3123.09	3111.79
12	3122.09	3130.60	3133.23	3133.31	3133.27	3133.39	3133.37	3133.48	3133.90	3132.28	3122.90	3111.39
13	3122.23	3130.83	3133.21	3133.28	3133.30	3133.38	3133.38	3133.41	3133.90	3132.24	3122.82	3110.97
14	3122.42	3131.08	3133.22	3133.28	3133.40	3133.38	3133.38	3133.36	3133.92	3132.24	3122.68	3110.52
15	3122.62	3131.35	3133.23	3133.26	3133.48	3133.38	3133.38	3133.32	3133.93	3132.22	3122.57	3110.08
16	3122.79	3131.62	3133.24	3133.27	3133.58	3133.32	3133.36	3133.29	3133.91	3132.15	3122.37	---
17	3123.00	3131.90	3133.23	3133.28	3133.64	3133.32	3133.35	3133.30	3133.93	3131.96	3121.85	---
18	3123.29	3132.18	3133.21	3133.31	3133.73	3133.32	3133.34	3133.29	3133.93	3131.71	3121.38	---
19	3123.58	3132.46	3133.22	3133.31	3133.69	3133.34	3133.32	3133.39	3133.98	3131.44	3121.02	---
20	3123.88	3132.75	3133.23	3133.32	3133.69	3133.32	3133.32	3133.53	3133.95	3131.18	3120.64	---
21	3124.14	3133.02	3133.28	3133.32	3133.67	3133.34	3133.34	3133.61	3133.93	3130.93	3120.39	---
22	3124.39	3133.17	3133.35	3133.33	3133.61	3133.36	3133.37	3133.62	3133.84	3130.62	---	---
23	3124.67	3133.23	3133.37	3133.37	3133.56	3133.37	3133.53	3133.69	3133.80	3130.24	---	---
24	3124.94	3133.23	3133.41	3133.37	3133.53	3133.38	3133.67	3133.71	3133.78	3129.89	---	---
25	3125.20	3133.22	3133.47	3133.38	3133.50	3133.47	3133.72	3133.86	3133.68	3129.59	---	---
26	3125.46	3133.21	3133.60	3133.35	3133.49	3133.54	3133.71	3133.88	3133.53	3129.19	---	---
27	3125.74	3133.25	3133.63	3133.36	3133.47	3133.54	3133.70	3133.85	3133.41	3128.85	---	---
28	3126.00	3133.26	3133.56	3133.39	3133.45	3133.52	3133.75	3133.79	3133.37	3128.46	3117.69	---
29	3126.30	3133.27	3133.52	3133.46	---	3133.48	3133.82	3133.75	3133.36	3128.04	3117.68	---
30	3126.59	3133.26	3133.49	3133.45	---	3133.47	3133.90	3133.82	3133.26	3127.63	3116.64	3104.48
31	3126.87	---	3133.47	3133.40	---	3133.48	---	3133.84	---	3127.23	3116.26	---
MEAN	3123.30	3131.06	3133.34	3133.35	3133.44	3133.40	3133.47	3133.67	3133.77	3131.23	---	---
MAX	3126.87	3133.27	3133.63	3133.46	3133.73	3133.54	3133.90	3134.04	3134.09	3133.19	---	---
MIN	3120.78	3127.14	3133.19	3133.26	3133.19	3133.32	3133.32	3133.29	3133.26	3127.23	---	---
(†)	13070	17600	17750	17700	17740	17760	18080	18030	17600	13510	6990	a2190
(‡)	+3710	+4,530	+150	-50	+40	+20	+320	-50	-430	-4290	-6320	-4800

CAL YR 1980 MEAN 3130.33 MAX 3133.99 MIN 3117.30 AC-FT‡ +3460
WTR YR 1981 MEAN - MAX 3134.09 MIN - AC-FT‡ -7170

† Contents in acre-feet, at 2400, on last day of month.
‡ Change in contents, in acre-feet.
a Contents estimated.
Note.--No gage height-record Sept. 16-30.

13285500 POWDER RIVER BELOW THIEF VALLEY RESERVOIR, NEAR NORTH POWDER, OR

LOCATION.--Lat 45°00'20", long 117°46'50", in NE¼NW¼ sec.35, T.6 S., R.40 E., Baker County, Hydrologic Unit 17050203, on right bank 0.6 mi (1.0 km) downstream from Thief Valley Reservoir, 7.0 mi (11.3 km) east of North Powder, and at mile 69.4 (112 km).

DRAINAGE AREA.--910 mi² (2,360 km²), approximately.

PERIOD OF RECORD.--March 1909 to June 1912, July to September 1932, August 1978 to current year. Prior to July 1932, published as Powder River near North Powder.

REVISED RECORDS.--WSP 1317: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,080.166 ft (938.835 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Aug. 18, 1978, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum.

REMARKS.--Records good. Flow regulated by Phillips Lake since October 1967, usable capacity, 90,540 acre-ft (112 hm³), by Wolf Creek Reservoir since April 1975, usable capacity, 10,400 acre-ft (12.8 hm³), and by Thief Valley Reservoir since February 1932, usable capacity, 17,400 acre-ft (21.5 hm³). Many diversions for irrigation above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 2,920 ft³/s (82.7 m³/s) Mar. 21, 1910, gage height, 10.0 ft (3.05 m), from rating curve extended above 1,000 ft³/s (28.3 m³/s); no flow Aug. 9 to Sept. 10, 1910.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 920 ft³/s (26.1 m³/s) May 2, June 9, gage height, 8.00 ft (2.438 m); minimum, 2.4 ft³/s (0.068 m³/s) Oct. 29, 30.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	3.1	123	260	183	220	258	805	537	89	131	125
2	43	3.6	131	247	168	210	252	858	435	54	131	121
3	43	3.6	166	234	160	200	250	800	367	92	129	121
4	43	5.2	277	221	153	210	221	740	328	101	129	111
5	43	12	286	211	153	202	216	660	325	103	127	80
6	43	12	252	204	151	190	195	600	420	101	127	80
7	43	12	186	195	141	186	188	540	516	101	125	78
8	43	12	121	190	141	186	186	500	669	101	125	85
9	43	12	113	186	125	183	186	450	886	101	123	97
10	43	12	109	168	88	177	179	400	831	101	123	95
11	43	12	116	162	103	170	173	280	703	101	113	94
12	43	12	116	160	127	166	179	190	655	101	63	94
13	43	12	111	151	158	164	173	140	628	55	39	92
14	43	12	103	149	214	160	164	115	655	44	39	91
15	43	12	114	135	289	158	164	95	651	44	38	89
16	43	12	118	131	409	166	149	90	619	44	101	88
17	33	12	114	139	454	151	139	78	660	85	129	86
18	7.4	13	113	143	450	145	127	76	655	113	127	85
19	6.8	13	111	145	431	145	123	94	674	116	125	82
20	6.8	13	116	145	378	153	139	210	723	114	123	81
21	6.2	13	137	149	331	147	139	390	679	118	123	80
22	5.7	49	151	151	310	158	149	400	619	129	121	78
23	5.7	108	190	164	290	168	216	440	541	133	120	77
24	5.2	114	214	190	280	175	374	480	484	137	120	76
25	4.3	109	239	195	270	188	439	600	409	137	120	73
26	4.1	103	307	181	260	304	454	680	319	135	118	72
27	4.1	113	384	190	250	322	416	600	229	135	118	70
28	3.4	123	378	207	230	292	442	553	173	135	118	69
29	2.7	129	328	252	---	269	500	488	143	135	120	44
30	2.9	127	295	247	---	255	583	512	129	133	127	25
31	2.9	---	277	211	---	252	---	570	---	133	125	---
TOTAL	789.2	1198.5	5796	5713	6697	6072	7373	13434	15662	3221	3497	2539
MEAN	25.5	40.0	187	184	239	196	246	433	522	104	113	84.6
MAX	43	129	384	260	454	322	583	858	886	137	131	125
MIN	2.7	3.1	103	131	88	145	123	76	129	44	38	25
AC-FT	1570	2380	11500	11330	13280	12040	14620	26650	31070	6390	6940	5040

CAL YR 1980 TOTAL 63966.7 MEAN 175 MAX 773 MIN 2.7 AC-FT 126900
WTR YR 1981 TOTAL 71991.7 MEAN 197 MAX 886 MIN 2.7 AC-FT 142800

13286700 POWDER RIVER NEAR RICHLAND, OR

LOCATION.--Lat 44°46'40", long 117°17'30", in SE¼ sec.14, T.9 S., R.44 E., Baker County, Hydrologic Unit 17050203, on left bank 0.4 mi (0.6 km) upstream from Upper Timber Canyon, 6.0 mi (9.7 km) west of Richland, and at mile 20.3 (32.7 km).

DRAINAGE AREA.--1,310 mi^2 (3,390 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 2,277.42 ft (694.158 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Regulation by several reservoirs, the largest being Phillips Lake since Oct. 31, 1967, active capacity, 90,540 acre-ft (112 hm^3), Thief Valley Reservoir, capacity, 17,400 acre-ft (21.5 hm^3), and since April 1975, Wolf Creek Reservoir, capacity, 10,400 acre-ft (12.8 hm^3). Diversions for irrigation above and below station.

AVERAGE DISCHARGE.--24 years, 244 ft^3/s (6.910 m^3/s), 176,800 acre-ft/yr (218 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,470 ft^3/s (98.3 m^3/s) Jan. 31, 1965, gage height, 6.68 ft (2.036 m); maximum gage height, 9.29 ft (2.832 m) Jan. 15, 1974 (ice jam); minimum discharge, 0.80 ft^3/s (0.023 m^3/s) Aug. 11, 12, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 890 ft^3/s (25.2 m^3/s) May 3, gage height, 3.53 ft (1.076 m); minimum, 10 ft^3/s (0.28 m^3/s) Aug. 15, 16.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	38	156	329	298	333	462	661	444	94	36	56
2	70	38	164	313	258	317	444	832	400	64	37	59
3	70	37	186	294	233	309	426	851	313	45	35	64
4	65	35	233	284	220	302	413	741	258	31	39	65
5	64	37	321	265	210	306	382	644	226	29	37	65
6	64	39	313	254	204	298	374	562	349	42	36	61
7	62	50	258	243	198	280	345	486	404	53	35	56
8	64	55	216	233	189	272	333	426	516	53	39	56
9	64	53	183	226	186	269	329	391	700	57	37	52
10	67	50	175	223	160	261	317	353	819	47	42	49
11	70	50	150	204	135	258	309	309	741	53	42	56
12	69	50	155	195	149	254	302	210	633	47	48	61
13	81	49	150	192	198	254	302	149	610	44	50	45
14	94	44	145	192	272	258	287	105	578	42	21	52
15	97	43	160	180	357	254	280	88	588	42	19	59
16	86	46	160	170	551	269	294	74	578	40	16	65
17	84	44	155	160	672	280	302	69	578	32	21	69
18	86	49	150	175	627	250	306	61	599	24	19	70
19	67	49	145	177	819	243	333	59	583	30	31	64
20	52	49	140	180	678	247	370	70	622	32	59	67
21	49	49	154	183	594	243	382	149	639	34	56	90
22	47	50	183	186	551	247	378	302	588	33	48	72
23	45	64	198	204	501	261	391	302	551	33	50	64
24	44	154	236	306	453	269	501	341	486	35	59	70
25	44	177	353	272	431	325	627	374	422	35	64	74
26	45	142	387	261	396	594	639	477	345	42	56	81
27	44	137	462	250	378	556	622	551	254	43	48	97
28	43	144	481	291	349	501	583	496	177	44	48	121
29	42	156	435	357	---	477	578	426	130	40	47	123
30	42	159	382	374	---	472	610	361	97	34	47	97
31	42	---	353	349	---	462	---	422	---	35	48	---
TOTAL	1944	2137	7339	7522	10267	9921	12221	11342	14228	1309	1270	2080
MEAN	62.7	71.2	237	243	367	320	407	366	474	42.2	41.0	69.3
MAX	97	177	481	374	819	594	639	851	819	94	64	123
MIN	42	35	140	160	135	243	280	59	97	24	16	45
AC-FT	3860	4240	14560	14920	20360	19680	24240	22500	28220	2600	2520	4130

CAL YR 1980 TOTAL 84713 MEAN 231 MAX 951 MIN 20 AC-FT 168000
WTR YR 1981 TOTAL 81580 MEAN 224 MAX 851 MIN 16 AC-FT 161800

13288200 EAGLE CREEK ABOVE SKULL CREEK, NEAR NEW BRIDGE, OR

LOCATION.--Lat 44°52'50", long 117°15'10", in SE¼ sec.7, T.8 S., R.45 E., Baker County, Hydrologic Unit 17050203, Wallowa-Whitman National Forest, on left bank 0.5 mi (0.8 km) upstream from Skull Creek, 6.5 mi (10.5 km) northwest of New Bridge, and at mile 10.5 (16.9 km).

DRAINAGE AREA.--156 mi^2 (404 km^2).

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

GAGE.--Water-stage recorder. Altitude of gage is 2,800 ft (853 m), from topographic map.

REMARKS.--Records excellent. No regulation. Some diversions above station for irrigation and one small interbasin diversion for irrigation supply. All diversions are small compared to flow at station during irrigation season.

AVERAGE DISCHARGE.--24 years, 320 ft^3/s (9.062 m^3/s), 231,800 acre-ft/yr (286 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,310 ft^3/s (150 m^3/s) July 12, 1975, gage height, 5.06 ft (1.542 m), from rating curve extended above 2,500 ft^3/s (70.8 m^3/s) on basis of slope-area measurement of peak flow; maximum gage height, 6.88 ft (2.097 m) Jan. 25, 1962 (ice jam); minimum daily discharge, 30 ft^3/s (0.85 m^3/s) Nov. 28, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,700 ft^3/s (48.1 m^3/s) and maximum discharge, 2,080 ft^3/s (58.9 m^3/s) May 1, gage height, 3.62 ft (1.103 m); minimum, 59 ft^3/s (1.67 m^3/s) Dec. 7, result of freezeup.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	94	96	219	124	168	254	1750	950	473	148	82
2	103	94	117	206	122	168	238	1520	910	426	142	82
3	103	92	119	196	122	168	234	1140	825	387	140	88
4	101	94	127	183	124	171	223	930	835	381	137	86
5	101	92	115	177	134	168	219	755	891	376	134	84
6	99	101	110	171	122	162	213	651	1290	409	129	84
7	99	302	72	165	115	159	206	586	1090	461	127	82
8	101	234	72	159	119	159	199	524	1330	335	129	90
9	88	183	70	156	132	159	196	505	1010	297	127	90
10	88	165	82	145	96	165	189	531	789	284	124	88
11	88	156	76	145	101	174	186	538	714	266	122	88
12	103	148	82	142	110	183	183	498	690	254	119	86
13	108	129	80	137	105	193	177	486	593	246	117	86
14	117	124	78	129	130	196	177	538	551	234	115	84
15	115	127	86	134	171	206	196	531	498	223	112	82
16	112	117	85	142	288	226	234	486	518	216	110	80
17	108	122	84	148	279	216	254	492	498	206	108	79
18	108	119	80	134	250	209	311	551	475	199	108	77
19	105	117	100	132	284	202	432	659	682	193	108	77
20	105	115	105	124	250	199	511	706	690	183	119	79
21	103	117	110	124	219	199	518	772	614	177	112	79
22	103	119	119	122	202	216	551	746	629	171	105	79
23	99	115	112	153	196	209	659	763	644	162	101	79
24	99	110	117	148	193	202	1050	853	579	156	94	79
25	101	105	142	137	183	275	872	1250	551	153	92	80
26	101	105	449	137	174	335	730	1270	558	151	90	84
27	99	108	403	137	168	302	674	1130	551	145	88	108
28	96	105	306	145	165	288	698	1070	486	156	86	124
29	96	105	258	148	---	288	872	1090	449	156	84	94
30	96	101	242	145	---	271	1170	1230	461	156	84	88
31	94	---	230	137	---	266	---	1080	---	151	84	---
TOTAL	3131	3815	4324	4677	4678	6502	12606	25631	21329	7783	3495	2568
MEAN	101	127	139	151	167	210	420	827	711	251	113	85.6
MAX	117	302	449	219	288	335	1170	1750	1330	473	148	124
MIN	88	92	70	122	96	159	177	486	449	145	84	77
AC-FT	6210	7570	8580	9280	9280	12900	25000	50840	42310	15440	6930	5090

CAL YR 1980 TOTAL 115683 MEAN 316 MAX 1680 MIN 60 AC-FT 229500
WTR YR 1981 TOTAL 100539 MEAN 275 MAX 1750 MIN 70 AC-FT 199400

13292000 IMNAHA RIVER AT IMNAHA, OR

LOCATION.--Lat 45°33'45", long 116°50'00", in SW¼ sec.16, T.1 N., R.48 E., Wallowa County, Hydrologic Unit 17060102, on left bank at Imnaha, 0.3 mi (0.5 km) downstream from Big Sheep Creek, and at mile 19.3 (31.1 km).

DRAINAGE AREA.--622 mi^2 (1,611 km^2).

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

REVISED RECORDS.--WSP 833: 1938. WSP 1397: 1929, 1932(M), 1949. WSP 1737: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,941.14 ft (591.659 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1934, nonrecording gage at site 0.25 mi (0.40 km) upstream at different datum. Aug. 6-31, 1934, nonrecording gage at present site and datum.

REMARKS.--Records excellent. No regulation. Diversions for irrigation above station. Water is diverted from Big Sheep Creek and tributaries above station for irrigation in Wallowa River basin.

AVERAGE DISCHARGE.--53 years, 512 ft^3/s (14.50 m^3/s), 370,900 acre-ft/yr (457 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft^3/s (286 m^3/s) Jan. 17, 1974, gage height, 7.86 ft (2.396 m), from rating curve extended above 3,500 ft^3/s (99.1 m^3/s); minimum observed, 16 ft^3/s (0.45 m^3/s) Nov. 22, 1931, result of freezeup; minimum daily, 25 ft^3/s (0.71 m^3/s) Nov. 22, 23, 1931.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,600 ft^3/s (45.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 25	0030	1,760	49.8	4.21	1.283	May 26	0300	2,250	63.7	4.63	1.411
May 2	0130	*2,640	74.8	*4.95	1.509	June 8	2200	2,110	59.8	4.51	1.375

Minimum, 107 ft^3/s (3.03 m^3/s) Sept. 17-19.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	159	151	162	497	258	394	639	2240	1570	880	238	135
2	162	154	176	468	225	385	627	2370	1500	807	231	138
3	159	154	297	435	210	372	639	1860	1410	756	225	135
4	157	151	622	403	200	372	622	1650	1340	731	218	133
5	154	151	555	376	200	364	610	1380	1330	712	212	130
6	151	154	425	351	210	343	616	1220	1760	706	206	130
7	151	265	343	331	190	327	599	1100	1650	900	200	128
8	148	425	231	323	200	323	560	1010	2020	687	194	123
9	146	282	245	319	190	308	539	942	1850	604	188	123
10	146	254	251	286	150	300	497	949	1620	565	185	118
11	146	225	268	279	185	304	478	978	1510	539	179	121
12	148	218	254	275	248	312	463	935	1630	513	176	118
13	182	191	221	265	258	323	435	900	1720	487	176	118
14	173	173	209	241	308	335	425	964	1630	444	173	116
15	182	200	235	215	351	343	449	1160	1480	425	165	114
16	179	171	221	212	381	398	560	1190	1430	407	162	114
17	168	194	221	265	528	394	627	1220	1360	385	159	109
18	162	191	225	268	533	376	744	1240	1240	376	157	109
19	162	185	231	251	582	368	949	1370	1380	360	159	114
20	162	179	235	231	693	364	1200	1620	1440	347	165	121
21	162	176	241	228	627	355	1190	1910	1300	335	159	125
22	159	188	279	225	576	364	1090	1910	1260	319	148	123
23	154	173	289	245	544	368	1160	1800	1290	308	146	125
24	154	176	293	297	533	355	1690	1810	1170	300	140	128
25	157	154	308	265	508	368	1650	1880	1110	297	140	130
26	179	157	523	258	473	482	1500	2040	1090	297	138	135
27	168	179	853	254	439	528	1420	1880	1080	282	135	159
28	157	171	775	279	412	544	1390	1760	978	279	135	254
29	157	168	639	297	---	599	1500	1700	887	265	135	182
30	154	171	565	297	---	604	1770	1800	866	251	135	159
31	154	---	533	282	---	599	---	1740	---	248	138	---
TOTAL	4952	5781	10925	9218	10212	12171	26638	46528	41901	14812	5317	3967
MEAN	160	193	352	297	365	393	888	1501	1397	478	172	132
MAX	182	425	853	497	693	604	1770	2370	2020	900	238	254
MIN	146	151	162	212	150	300	425	900	866	248	135	109
AC-FT	9820	11470	21670	18280	20260	24140	52840	92290	83110	29380	10550	7870

CAL YR 1980 TOTAL 205025 MEAN 560 MAX 2160 MIN 85 AC-FT 406700
WTR YR 1981 TOTAL 192422 MEAN 527 MAX 2370 MIN 109 AC-FT 381700

13318800 GRANDE RONDE RIVER AT HILGARD, OR

LOCATION.--Lat 45°20'21", long 118°14'35", in NE¼NE¼ sec.1, T.3 S., R.36 E., Union County, Hydrologic Unit 17060104, on left bank 8.8 mi (14.2 km) northwest of La Grande, 1.6 mi (2.6 km) upstream from Fivepoint Creek, and at mile 171.3 (275.6 km).

DRAINAGE AREA.--555 mi² (1,437 km²).

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,993.62 ft (912.455 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent except those for period of no gage-height record, July 31 to Sept. 13, which are good. Slight regulation by city of La Grande reservoir on Beaver Creek, capacity, about 900 acre-ft (1.11 hm³). Diversions for irrigation above station. Since 1909, city of La Grande has diverted about 3 ft³/s (0.08 m³/s) from Beaver Creek above station for domestic water supply.

AVERAGE DISCHARGE.--15 years, 299 ft³/s (8.468 m³/s), 216,600 acre-ft/yr (267 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,740 ft³/s (134 m³/s) Mar. 13, 1972, gage height, 7.18 ft (2.188 m); maximum gage height, 12.25 ft (3.734 m) Jan. 15, 1974 (ice jam); minimum discharge, 9.6 ft³/s (0.27 m³/s) Aug. 17, 18, 23, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 30, 1965, reached a stage of about 9 ft (2.74 m), from floodmark, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,700 ft³/s (48.1 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 19	0030	*2,220	62.9	*5.38	1.640	May 21	0300	1,800	51.0	5.06	1.542

Minimum, 14 ft³/s (0.40 m³/s) Nov. 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	37	38	271	51	330	1090	1100	602	210	46	25
2	31	38	54	246	46	306	951	1020	544	196	45	23
3	31	41	124	222	65	275	812	828	490	182	44	23
4	30	42	147	192	52	297	692	773	449	165	43	22
5	30	42	132	175	56	279	636	692	438	156	42	22
6	29	43	111	150	74	218	596	609	602	175	40	22
7	29	72	82	124	57	237	551	564	570	302	39	21
8	28	116	38	98	54	254	507	551	1010	226	37	20
9	28	82	34	94	52	237	490	507	1510	178	35	20
10	28	72	45	90	47	233	455	495	1330	156	34	20
11	28	61	60	80	50	226	427	478	1130	144	32	20
12	30	57	84	78	64	226	438	455	1030	132	31	20
13	36	37	95	74	99	222	422	427	969	124	30	21
14	46	23	92	70	132	222	406	478	860	114	34	22
15	57	57	90	64	185	218	433	616	758	106	40	21
16	59	49	96	76	804	258	526	656	743	99	33	21
17	51	46	94	90	1090	250	576	699	804	92	29	21
18	46	51	90	104	1250	222	616	706	678	88	27	21
19	43	42	86	106	1890	237	713	766	678	82	29	21
20	42	43	92	92	1260	226	789	1250	643	78	34	23
21	42	46	100	92	884	214	804	1700	570	74	31	25
22	42	54	150	97	713	275	743	1440	514	70	28	25
23	34	45	220	109	602	320	796	1210	466	68	25	25
24	38	45	262	116	538	306	1050	1090	422	65	24	26
25	39	31	678	92	490	449	995	1290	380	63	23	27
26	39	56	977	68	444	1300	943	1190	340	61	22	29
27	39	51	699	92	401	1490	884	1020	306	59	22	39
28	37	57	526	88	360	1270	828	884	279	56	21	65
29	36	54	411	86	---	1150	852	781	254	52	21	49
30	37	51	355	88	---	1030	917	781	233	50	22	39
31	37	---	311	78	---	977	---	699	---	48	24	---
TOTAL	1153	1541	6373	3502	11810	13754	20938	25755	19602	3671	987	778
MEAN	37.2	51.4	206	113	422	444	698	831	653	118	31.8	25.9
MAX	59	116	977	271	1890	1490	1090	1700	1510	302	46	65
MIN	28	23	34	64	46	214	406	427	233	48	21	20
AC-FT	2290	3060	12640	6950	23430	27280	41530	51090	38880	7280	1960	1540

CAL YR 1980 TOTAL 112890 MEAN 308 MAX 1300 MIN 23 AC-FT 223900
WTR YR 1981 TOTAL 109864 MEAN 301 MAX 1890 MIN 20 AC-FT 217900

13319000 GRANDE RONDE RIVER AT LA GRANDE, OR

LOCATION.--Lat 45°20'47", long 118°07'26", in NW¼SE¼ sec.36, T.2 S., R.37 E., Union County, Hydrologic Unit 17060104, on right bank 1.8 mi (2.9 km) northwest of La Grande, 5.7 mi (9.2 km) downstream from Fivepoint Creek, and at mile 164.0 (263.9 km).

DRAINAGE AREA.--678 mi^2 (1,756 km^2).

PERIOD OF RECORD.--October 1903 to September 1915, February 1918 to September 1923, October 1925 to current year. Monthly discharge only for some periods, published in WSP 1317. Published as "at Hilgard" 1903-15.

REVISED RECORDS.--WSP 768: 1933. WSP 1397: 1904-11, 1913, 1915, 1919-20, 1922-23, 1926, 1929-31, 1936-37, 1939, 1942. WSP 1737: Drainage area. WRD Oreg. 1974: 1973(M).

GAGE.--Water-stage recorder. Datum of gage is 2,826.25 ft (861.441 m) National Geodetic Vertical Datum of 1929. Nov. 6, 1903, to Sept. 30, 1915, nonrecording gage at site 5.5 mi (8.8 km) upstream at various datums. Feb. 16, 1918, to June 28, 1923, and Oct. 1, 1925, to Nov. 23, 1931, nonrecording gage at site 0.7 mi (1.1 km) downstream at various datums. Nov. 24, 1931, to Oct. 8, 1965, water-stage recorder at site 0.3 mi (0.5 km) upstream at datum 4.61 ft (1.405 m) higher.

REMARKS.--Records good. Since 1915, slight regulation by city of La Grande reservoir on Beaver Creek, capacity, about 900 acre-ft (1.11 hm^3). Diversions for irrigation above station. Since 1909, city of La Grande has diverted about 3 ft^3/s (0.08 m^3/s) from Beaver Creek above station for domestic water supply.

AVERAGE DISCHARGE.--73 years, 381 ft^3/s (10.79 m^3/s), 276,000 acre-ft/yr (340 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft^3/s (300 m^3/s) Jan. 30, 1965, gage height, 11.44 ft (3.487 m), site and datum then in use, from rating curve extended above 7,200 ft^3/s (204 m^3/s); minimum, 3.9 ft^3/s (0.11 m^3/s) Aug. 26, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,100 ft^3/s (59.5 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 19	0300	*3,410	96.6	*8.40	2.560	Mar. 27	0600	2,240	63.4	6.95	2.118

Minimum, 20 ft^3/s (0.57 m^3/s) Sept. 18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	41	57	361	84	468	1530	1340	667	252	58	30
2	36	42	62	325	65	434	1310	1240	603	235	57	29
3	35	45	144	299	72	398	1120	995	545	216	56	28
4	35	46	175	263	66	412	933	928	502	198	53	28
5	34	46	168	242	70	391	854	821	492	185	52	28
6	33	52	148	219	86	317	793	718	672	203	50	28
7	33	82	113	183	72	335	727	667	626	338	47	27
8	31	142	45	153	68	354	663	659	1110	270	45	26
9	31	110	39	130	64	326	638	606	1770	213	43	24
10	31	94	50	115	57	317	595	583	1560	185	41	24
11	31	83	78	105	66	314	553	560	1340	169	40	24
12	34	75	92	94	100	311	568	534	1200	158	38	24
13	40	57	102	86	132	311	549	502	1130	147	36	24
14	54	39	97	88	181	308	524	549	979	138	42	23
15	68	63	96	92	255	305	549	701	859	128	46	22
16	68	66	105	107	1440	354	655	731	835	120	38	22
17	60	55	97	125	1630	345	714	775	918	111	35	22
18	53	66	96	151	1890	314	766	775	766	104	33	21
19	50	58	91	141	2820	332	883	849	771	99	35	22
20	48	59	99	133	1860	314	984	1380	735	95	40	24
21	47	57	110	129	1270	298	1010	1960	651	91	38	26
22	47	71	162	133	995	367	938	1670	587	87	34	27
23	40	68	237	147	835	423	1020	1410	538	82	32	27
24	43	57	287	167	748	405	1360	1260	485	79	31	28
25	43	49	943	135	676	568	1270	1480	441	76	29	30
26	44	58	1550	106	622	1760	1180	1380	398	75	28	32
27	44	63	1050	124	560	2090	1100	1170	357	72	28	41
28	42	77	743	126	502	1750	1010	1010	329	68	28	68
29	40	72	553	130	---	1550	1040	878	302	64	28	58
30	41	71	473	129	---	1400	1110	869	276	63	28	45
31	41	---	414	117	---	1330	---	784	---	60	29	---
TOTAL	1313	1964	8476	4855	17286	18901	26946	29784	22444	4381	1218	882
MEAN	42.4	65.5	273	157	617	610	898	961	748	141	39.3	29.4
MAX	68	142	1550	361	2820	2090	1530	1960	1770	338	58	68
MIN	31	39	39	86	57	298	524	502	276	60	28	21
AC-FT	2600	3900	16810	9630	34290	37490	53450	59080	44520	8690	2420	1750

CAL YR 1980 TOTAL 141407 MEAN 386 MAX 1660 MIN 31 AC-FT 280500
WTR YR 1981 TOTAL 138450 MEAN 379 MAX 2820 MIN 21 AC-FT 274600

13320000 CATHERINE CREEK NEAR UNION, OR

LOCATION.--Lat 45°09'20", long 117°46'26", in NW¼SE¼ sec.2, T.5 S., R.40 E., Union County, Hydrologic Unit 17060104, on right bank 3.0 mi (4.8 km) downstream from Little Catherine Creek, 5.5 mi (8.8 km) southeast of Union, and at mile 25.4 (40.9 km).

DRAINAGE AREA.--105 mi^2 (272 km^2).

PERIOD OF RECORD.--May 1906 to May 1907 (gage heights only), August 1911 to December 1912, March to September 1915, February 1918 to September 1919, October 1925 to current year. Monthly discharge only for some periods, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1912-13, 1919, 1926, 1928-33, 1937, 1939, 1940(M), 1941-43, 1950.

GAGE.--Water-stage recorder. Datum of gage is 3,081.76 ft (939.320 m) National Geodetic Vertical Datum of 1929 (Oregon State Highway Department bench mark). Prior to Nov. 28, 1938, nonrecording gage at several sites within 1.8 mi (2.9 km) of present site at various datums. Nov. 28, 1938, to May 16, 1939, water-stage recorder at site 400 ft (122 m) downstream at datum 4.29 ft (1.308 m) lower.

REMARKS.--Records good except those for December through February, which are fair. No regulation. Several small diversions for irrigation above station. Since 1937, diversion to Big Creek in Powder River basin provides a small part of the water used for irrigation in that basin.

AVERAGE DISCHARGE.--58 years (water years 1912, 1919, 1926-81), 118 ft^3/s (3.342 m^3/s), 85,490 acre-ft/yr (105 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,740 ft^3/s (49.3 m^3/s) May 27, 1948, gage height, 4.57 ft (1.393 m); minimum, 6.5 ft^3/s (0.18 m^3/s) Feb. 4, 1955, result of freezeup; minimum daily, 8 ft^3/s (0.23 m^3/s) Nov. 7, 1925.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 500 ft^3/s (14.2 m^3/s) and maximum discharge, 683 ft^3/s (19.3 m^3/s) May 1, gage height, 3.02 ft (0.920 m); minimum, 20 ft^3/s (0.57 m^3/s) Nov. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	26	27	99	46	78	153	610	315	134	44	28
2	29	28	32	89	44	78	144	583	303	126	43	28
3	28	27	34	80	50	78	142	491	276	116	42	28
4	28	28	41	72	47	78	132	427	264	108	42	27
5	27	26	34	65	49	72	126	361	267	105	41	27
6	27	30	33	60	54	67	120	319	361	124	39	27
7	26	47	31	57	50	64	114	285	328	146	38	26
8	26	42	28	56	47	61	108	259	447	112	37	25
9	26	36	27	53	50	60	105	239	408	99	35	25
10	26	34	33	52	43	61	97	239	358	94	34	25
11	26	33	38	48	45	65	94	231	325	90	34	26
12	33	31	41	46	48	70	96	218	322	83	34	25
13	35	29	43	44	49	75	89	210	282	80	33	25
14	44	41	40	42	72	78	89	237	259	76	33	24
15	36	32	42	40	70	81	105	248	234	73	32	24
16	34	27	45	38	128	103	132	234	248	70	32	24
17	34	29	46	39	159	96	146	229	231	68	31	24
18	33	28	43	40	153	96	178	248	220	65	31	24
19	31	27	40	42	190	92	231	276	267	62	32	24
20	31	27	41	39	187	89	262	297	264	61	34	26
21	30	28	44	39	157	83	259	303	245	60	31	25
22	28	31	44	41	134	89	250	291	231	56	30	26
23	27	28	42	51	122	83	312	297	220	54	29	26
24	28	27	49	49	120	80	479	309	202	53	29	26
25	28	34	67	44	108	108	419	393	190	52	26	27
26	29	30	226	39	99	157	368	397	180	53	27	29
27	27	27	187	45	89	168	325	379	173	49	27	41
28	26	29	150	53	83	171	322	361	159	48	28	43
29	27	28	122	54	---	171	361	358	146	47	27	32
30	27	28	118	49	---	159	447	375	138	46	28	30
31	26	---	108	47	---	153	---	344	---	45	29	---
TOTAL	912	918	1896	1612	2493	2964	6205	10048	7863	2455	1032	817
MEAN	29.4	30.6	61.2	52.0	89.0	95.6	207	324	262	79.2	33.3	27.2
MAX	44	47	226	99	190	171	479	610	447	146	44	43
MIN	26	26	27	38	43	60	89	210	138	45	26	24
AC-FT	1810	1820	3760	3200	4940	5880	12310	19930	15600	4870	2050	1620

CAL YR 1980 TOTAL 39231 MEAN 107 MAX 551 MIN 18 AC-FT 77810
WTR YR 1981 TOTAL 39215 MEAN 107 MAX 610 MIN 24 AC-FT 77780

13323500 GRANDE RONDE RIVER NEAR ELGIN, OR

LOCATION.--Lat 45°30'45", long 117°55'35", in NW¼NW¼ sec.3, T.1 S., R.39 E., Union County, Hydrologic Unit 17060104, on right bank 700 ft (213 m) upstream from abandoned highway bridge, 1.5 mi (2.4 km) downstream from Willow Creek, 3.6 mi (5.8 km) south of Elgin, and at mile 104.2 (167.7 km).

DRAINAGE AREA.--1,250 mi² (3,240 km²), approximately.

PERIOD OF RECORD.--August 1955 to September 1981 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 2,660.31 ft (810.862 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No regulation. Many diversions for irrigation above station.

AVERAGE DISCHARGE.--26 years, 668 ft³/s (18.92 m³/s), 484,000 acre-ft/yr (597 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,480 ft³/s (184 m³/s) Feb. 2, 1965, gage height, 13.79 ft (4.203 m); no flow Aug. 20-24, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Outstanding floods occurred in 1894 and 1917, based on Corps of Engineers flood profiles. Flood in May 1948 reached an elevation of 2,672.9 ft (814.70 m) on Corps of Engineers gage at bridge 700 ft (213 m) downstream, discharge, 5,690 ft³/s (161 m³/s), result of discharge measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,410 ft³/s (96.6 m³/s) Feb. 20, gage height, 9.53 ft (2.905 m); minimum, 0.48 ft³/s (0.014 m³/s) Sept. 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	105	133	794	311	1010	2170	1950	1420	517	45	7.8
2	86	99	144	714	264	936	2170	2080	1280	463	43	4.0
3	83	101	172	641	237	886	2000	2050	1170	419	41	3.3
4	75	104	239	581	251	834	1800	1950	1040	380	41	2.1
5	63	109	276	530	242	819	1600	1860	956	345	44	1.8
6	62	102	269	490	249	766	1470	1710	999	333	37	1.6
7	58	125	230	438	251	707	1370	1550	1120	410	34	1.3
8	56	160	168	392	230	703	1280	1450	1270	477	35	1.4
9	58	199	156	369	227	693	1210	1320	1880	431	36	1.3
10	60	187	111	392	174	662	1160	1210	2170	371	36	1.1
11	62	174	120	333	179	635	1090	1140	2170	325	30	1.3
12	68	162	170	328	210	618	1040	1060	2080	292	23	1.0
13	72	154	181	300	314	607	1040	995	1960	264	22	.86
14	93	123	170	254	477	604	991	948	1800	242	18	.80
15	111	109	172	237	594	604	960	1070	1630	218	17	.86
16	133	131	174	203	1150	624	1010	1150	1470	190	15	.63
17	139	131	183	249	2310	676	1120	1230	1480	166	16	.53
18	141	123	176	256	2420	666	1200	1260	1410	154	16	.92
19	141	129	179	303	2940	648	1300	1270	1330	141	13	1.8
20	129	122	185	303	3360	641	1450	1410	1330	123	17	2.1
21	118	112	203	284	3060	624	1550	1960	1270	112	18	2.1
22	112	135	284	279	2560	631	1570	2190	1190	87	17	1.8
23	114	148	316	284	2050	738	1580	2160	1110	80	15	2.8
24	107	141	404	311	1680	741	1750	2010	1030	80	13	4.0
25	102	127	798	319	1500	748	1970	1940	940	69	9.1	4.2
26	104	114	1620	295	1360	1400	1980	2050	860	68	6.6	5.8
27	104	125	1840	266	1240	2120	1980	2000	780	69	5.8	19
28	112	131	1510	297	1110	2360	1900	1860	700	66	5.1	38
29	109	139	1210	325	---	2330	1840	1710	638	63	6.6	46
30	101	139	1010	328	---	2250	1840	1600	574	55	8.7	46
31	99	---	886	333	---	2140	---	1550	---	48	12	---
TOTAL	2955	3960	13689	11428	30950	30421	45391	49693	39057	7058	695.9	206.20
MEAN	95.3	132	442	369	1105	981	1513	1603	1302	228	22.4	6.87
MAX	141	199	1840	794	3360	2360	2170	2190	2170	517	45	46
MIN	56	99	111	203	174	604	960	948	574	48	5.1	.53
AC-FT	5860	7850	27150	22670	61390	60340	90030	98570	77470	14000	1380	409

CAL YR 1980 TOTAL 234892.70 MEAN 642 MAX 2340 MIN 5.5 AC-FT 465900
WTR YR 1981 TOTAL 235504.10 MEAN 645 MAX 3360 MIN .53 AC-FT 467100

13325001 EAST FORK WALLOWA RIVER NEAR JOSEPH, OR

LOCATION.--Lat 45°16'20", long 117°12'35", in NE¼ sec.29, T.3 S., R.45 E., Wallowa County, Hydrologic Unit 17060105, on left bank 0.2 mi (0.3 km) upstream from confluence with West Fork, 1.0 mi (1.6 km) upstream from Wallowa Lake, 5.5 mi (8.8 km) south of Joseph, and at mile 0.2 (0.3 km).

DRAINAGE AREA.--10.3 mi^2 (26.7 km^2).

PERIOD OF RECORD.--July 1924 to current year. Prior to October 1952, records published separately as East Fork Wallowa River near Joseph and Wallowa Falls powerplant tailrace near Joseph.

REVISED RECORDS.--WSP 1247: 1931, 1937(M), 1948-49, records for river station; 1948, records for tailrace station. WSP 1737: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,517.69 ft (1,376.992 m) National Geodetic Vertical Datum of 1929 (Pacific Power & Light Co. bench mark). Prior to Apr. 8, 1950, nonrecording gage at same site and datum.

REMARKS.--Records good. All records presented herein include flow in Wallowa Falls powerplant tailrace of Pacific Power & Light co. Most of low flow is diverted at dam 1.5 mi (2.4 km) upstream into a conduit 1.0 mi (1.6 km) above Wallowa Falls powerhouse and discharged into West Fork 0.4 mi (0.6 km) below powerhouse.

AVERAGE DISCHARGE.--57 years, 21.6 ft^3/s (0.612 m^3/s), 28.48 in/yr (723 mm/yr), 15,650 acre-ft/yr (19.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 450 ft^3/s (12.7 m^3/s) July 25, 1937 (no flow in powerplant tailrace), from rating curve extended above 80 ft^3/s (2.27 m^3/s); minimum daily, 4.6 ft^3/s (0.13 m^3/s) Feb. 17, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 103 ft^3/s (2.92 m^3/s) June 7; minimum daily, 9.1 ft^3/s (0.26 m^3/s) Nov. 30.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	14	12	18	14	14	13	45	70	62	23	17
2	14	14	13	18	14	13	12	39	71	59	22	18
3	14	15	19	17	13	13	12	33	69	58	23	17
4	15	14	18	16	13	15	12	31	68	58	22	17
5	14	15	17	17	13	12	12	30	71	59	22	17
6	15	17	16	17	14	13	12	27	83	62	21	17
7	14	34	15	16	13	13	12	27	85	65	21	17
8	14	24	15	15	13	13	12	26	93	55	21	17
9	14	20	13	15	13	12	12	26	78	48	21	17
10	14	18	14	15	13	12	12	26	72	45	20	16
11	14	17	14	15	12	13	12	25	68	42	20	16
12	16	16	15	15	14	13	12	23	68	41	20	16
13	16	14	15	15	13	12	11	24	61	39	20	16
14	16	13	15	16	13	12	12	26	60	38	20	19
15	12	14	13	14	13	12	12	25	58	35	19	14
16	22	13	13	15	22	14	13	25	58	36	20	16
17	17	14	14	15	14	11	13	25	54	35	19	16
18	13	14	14	15	18	12	14	26	50	34	20	15
19	12	13	14	9.4	18	12	15	32	61	33	20	16
20	16	13	14	12	15	12	16	57	61	32	20	16
21	13	16	14	15	15	11	14	59	61	29	17	16
22	15	16	16	16	15	12	15	51	61	29	17	16
23	14	15	15	15	14	12	20	53	63	28	17	16
24	15	14	15	14	14	12	25	53	63	28	18	16
25	15	15	22	14	14	13	20	64	67	27	18	11
26	16	9.6	29	14	13	13	20	64	65	27	18	12
27	15	9.6	27	14	14	13	20	65	64	26	18	25
28	14	9.3	22	14	14	13	23	64	61	26	17	17
29	14	9.2	20	15	---	12	25	60	61	25	17	13
30	15	9.1	20	15	---	13	30	70	61	24	18	12
31	14	---	19	15	---	12	---	77	---	23	18	---
TOTAL	456	448.8	512	466.4	398	389	463	1278	1986	1228	607	484
MEAN	14.7	15.0	16.5	15.0	14.2	12.5	15.4	41.2	66.2	39.6	19.6	16.1
MAX	22	34	29	18	22	15	30	77	93	65	23	25
MIN	12	9.1	12	9.4	12	11	11	23	50	23	17	11
CFSM	1.43	1.46	1.60	1.46	1.38	1.21	1.50	4.00	6.43	3.85	1.90	1.56
IN.	1.65	1.62	1.85	1.68	1.44	1.40	1.67	4.62	7.17	4.43	2.19	1.75
AC-FT	904	890	1020	925	789	772	918	2530	3940	2440	1200	960

CAL YR 1980	TOTAL	7764.1	MEAN 21.2	MAX 76	MIN 6.7	CFSM 2.06	IN 28.04	AC-FT	15400	
WTR YR 1981	TOTAL	8716.2	MEAN 23.9	MAX 93	MIN 9.1	CFSM 2.32	IN 31.48	AC-FT	17290	

13326000 WALLOWA LAKE NEAR JOSEPH, OR

LOCATION.--Lat 45°20'10", long 117°13'15", in NW¼ sec.5, T.3 S., R.45 E., Wallowa County, Hydrologic Unit 17060105, at spillway near right end of Wallowa Lake dam on Wallowa River, 1.3 mi (2.1 km) southeast of Joseph, and at mile 50.2 (80.8 km).

DRAINAGE AREA.--50.8 mi^2 (131.6 km^2).

PERIOD OF RECORD.--November 1903 to July 1906 (gage height only), January 1912 to March 1914, May to September 1915 (gage heights and change in contents only), October 1925 to June 1926, December 1926 to current year. Monthend contents only for some periods, published in WSP 1317. November 1903 to March 1905 published as Wallowa River at Joseph. Change in contents for January 1912 to March 1914 and May to September 1915 published with records for Wallowa River at Joseph.

REVISED RECORDS.--WSP 1737: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,355.66 ft (1,327.605 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1925, nonrecording gage at several sites within 0.5 mi (0.8 km) of present site at different datums. Oct. 1, 1925, to June 30, 1926, Dec. 1, 1926, to May 18, 1961, nonrecording gage near left end of dam at same datum.

REMARKS.--Reservoir is formed by concrete dam. Capacity, 42,750 acre-ft (52.7 hm^3) between gage heights 0.0 (sill of outlet gates) and 26.8 ft (8.169 m), spillway crest. About 5,300 acre-ft (6.53 hm^3) dead storage above outlet gates, because channel is about 3.4 ft (1.036 m) above outlet gates. Dead storage below outlet gates not known. Records are based on capacities above outlet gates.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 47,830 acre-ft (59.0 hm^3) June 5-7, 1957, gage height, 29.85 ft (9.098 m); minimum observed, 4,790 acre-ft (5.91 hm^3) Oct. 10, 1929, gage height, 3.10 ft (0.945 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 44,440 acre-ft (54.8 hm^3) June 8, gage height, 27.82 ft (8.480 m); minimum, 16,840 acre-ft (20.8 hm^3) Sept. 26, gage height, 10.82 ft (3.298 m).

MONTHEND GAGE-HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Gage Height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	11.84	18,440	-
Oct. 31	11.80	18,380	-60
Nov. 30	13.29	20,750	+2,370
Dec. 31	15.77	24,710	+3,960
CAL YR 1980	-	-	+5,450
Jan. 31	17.87	28,090	+3,380
Feb. 28	19.53	30,790	+2,700
Mar. 31	20.91	33,040	+2,250
Apr. 30	23.91	37,970	+4,930
May 31	27.67	44,190	+6,220
June 30	g26.89	42,890	-1,300
July 31	21.84	34,560	-8,330
Aug. 31	13.07	20,400	-14,160
Sept.30	11.06	17,220	-3,180
WTR YR 1981	-	-	-1,220

g Computed from graph based on gage readings.

13327500 WALLOWA RIVER AT JOSEPH, OR

LOCATION.--Lat 45°20'15", long 117°13'35", in NW¼ sec.5, T.3 S., R.45 E., Wallowa County, Hydrologic Unit 17060105, on left bank 0.2 mi (0.3 km) downstream from Wallowa Lake dam, 1.1 mi (1.8 km) south of Joseph, and at mile 50.0 (80.4 km).

DRAINAGE AREA.--50.9 mi^2 (131.8 km^2).

PERIOD OF RECORD.--November 1903 to August 1907, June 1908 to March 1914, May to September 1915, December 1926 to current year. Monthly discharge only for some periods, published in WSP 1317. Published as "near Joseph" 1911.

REVISED RECORDS.--WSP 1397: 1906. WSP 1737: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,326.86 ft (1,318.827 m) National Geodetic Vertical Datum of 1929. Nov. 12, 1903, to Sept. 25, 1915, nonrecording gage at several sites at lake outlet or near present site at different datums.

REMARKS.--Records good. Monthly discharge adjusted for storage in Wallowa Lake (see station 13326000) and diversion from Wallowa Lake by Silver Lake ditch. Silver Lake ditch diverts at Wallowa Lake dam for irrigation northeast of Joseph. City of Joseph diverts less than 1.0 ft^3/s (0.028 m^3/s) from Wallowa Lake for municipal use.

AVERAGE DISCHARGE.--54 years (water years 1928-81), 133 ft^3/s (3.767 m^3/s), 35.48 in/yr (901 mm/yr), 96,360 acre-ft/yr (119 hm^3/yr), adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,550 ft^3/s (43.9 m^3/s) June 10, 1969, gage height, 5.15 ft (1.570 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 756 ft^3/s (21.4 m^3/s) June 8, gage height, 4.52 ft (1.378 m); minimum, 19 ft^3/s (0.54 m^3/s) Feb. 24, 25.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	38	35	31	23	20	22	23	493	335	340	95
2	64	38	35	31	23	20	22	23	478	337	335	90
3	64	38	35	31	23	20	23	23	469	340	303	82
4	64	38	35	30	24	20	23	27	460	337	259	78
5	64	38	35	29	24	20	23	29	460	340	257	75
6	64	38	35	29	23	20	23	98	469	340	271	75
7	64	39	35	29	23	20	23	141	487	348	273	74
8	64	39	35	29	23	20	22	141	675	342	284	78
9	64	39	35	29	23	20	22	141	728	330	287	81
10	65	39	36	28	23	21	22	141	709	320	282	85
11	65	39	36	27	23	21	22	141	668	320	268	87
12	64	39	36	27	23	21	22	141	557	320	268	87
13	63	39	36	27	22	21	22	141	460	320	262	86
14	63	39	36	27	22	21	22	141	222	320	257	86
15	63	39	36	27	22	21	23	141	114	320	257	113
16	63	39	35	27	22	21	23	141	132	320	259	124
17	63	39	36	27	21	21	23	141	150	320	264	122
18	63	38	36	26	21	21	23	141	154	320	255	148
19	63	38	36	24	20	21	23	141	191	320	242	168
20	63	39	36	24	20	21	23	141	358	320	225	170
21	63	39	36	23	20	21	23	141	570	320	208	141
22	63	38	35	23	20	21	23	146	587	320	201	98
23	54	37	35	23	20	21	23	227	577	320	195	66
24	43	35	35	23	20	21	23	330	560	310	191	51
25	38	35	35	23	20	22	23	335	522	310	185	46
26	38	35	34	23	20	22	23	379	417	310	179	39
27	38	35	33	23	20	22	23	434	335	308	166	35
28	38	35	33	23	20	22	23	445	335	313	164	35
29	38	35	32	23	---	22	23	442	337	322	145	32
30	39	35	32	23	---	22	23	434	337	337	131	30
31	38	---	31	23	---	22	---	466	---	340	114	---
TOTAL	1764	1131	1081	812	608	649	681	5976	13011	10079	7327	2577
MEAN	56.9	37.7	34.9	26.2	21.7	20.9	22.7	193	434	325	236	85.9
MAX	65	39	36	31	24	22	23	466	728	348	340	170
MIN	38	35	31	23	20	20	22	23	114	308	114	30
AC-FT	3500	2240	2140	1610	1210	1290	1350	11850	25810	19990	14530	5110
MEAN†	59.2	82.0	103	83.9	72.6	60.3	108	300	422	230	78.6	51.1
CFSM†	1.16	1.61	2.02	1.65	1.43	1.18	2.12	5.89	8.29	4.52	1.54	1.00
IN†	1.34	1.80	2.33	1.90	1.48	1.37	2.37	6.79	9.24	5.21	1.78	1.12
AC-FT†	3640	4880	6320	5160	4030	3710	6430	18430	25090	14140	4830	3040

CAL YR 1980 TOTAL 44324 MEAN 121 MAX 590 MIN 12 AC-FT 87920 MEAN† 142 CFSM† 2.79 IN† 37.88 AC-FT† 102810
WTR YR 1981 TOTAL 45696 MEAN 125 MAX 728 MIN 20 AC-FT 90640 MEAN† 138 CFSM† 2.71 IN† 36.74 AC-FT† 99710

† Adjusted for change in contents of Wallowa Lake and diversion by Silver Lake ditch.

13330000 LOSTINE RIVER NEAR LOSTINE, OR

LOCATION.--Lat 45°26'20", long 117°25'35", in NW¼ sec.34, T.1 S., R.43 E., Wallowa County, Hydrologic Unit 17060105, on left bank 3.5 mi (5.6 km) south of Lostine and at mile 10.0 (16.1 km).

DRAINAGE AREA.--70.9 mi^2 (183.6 km^2).

PERIOD OF RECORD.--August 1912 to March 1914, April to September 1915, July 1925 to current year. Monthly discharge only for some periods, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1913, 1942. WSP 1737: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,650 ft (1,110 m), by barometer. See WSP 1317 or 1737 for history of changes prior to Dec. 16, 1953.

REMARKS.--Records excellent. Minam Lake Reservoir, capacity 440 acre-ft (0.54 hm^3), has stored and diverted flow from Minam River since 1917 for irrigation in Lostine River basin. Diversions for irrigation above station.

AVERAGE DISCHARGE.--57 years (water years 1913, 1926-81), 195 ft^3/s (5.522 m^3/s), 141,300 acre-ft/yr (174 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,550 ft^3/s (72.2 m^3/s) June 16, 1974, gage height, 7.55 ft (2.301 m); minimum, 7.5 ft^3/s (0.21 m^3/s) Mar. 2, 1966, result of freezeup; minimum daily, 10 ft^3/s (0.28 m^3/s) Nov. 28-30, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,100 ft^3/s (31.2 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 1	2030	1,170	33.1	6.20	1.890	June 19	2300	1,110	31.4	6.07	1.850
June 6	0430	*1,570	44.5	*7.04	2.146						

Minimum, 27 ft^3/s (0.76 m^3/s) Sept. 18, 19.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	36	46	237	53	84	64	993	717	555	97	52
2	50	38	65	211	56	82	61	843	691	474	93	50
3	48	37	72	189	56	80	61	602	647	453	89	47
4	46	42	75	170	55	79	59	487	697	477	86	44
5	45	41	63	159	54	75	61	389	839	485	82	43
6	44	52	59	146	55	73	59	330	1290	501	79	41
7	43	233	49	137	50	71	58	291	1020	560	76	38
8	42	189	42	128	51	70	57	259	1300	369	73	36
9	41	140	43	121	49	67	58	241	985	304	71	35
10	41	114	47	112	43	66	55	241	743	291	70	34
11	40	102	45	107	39	66	55	233	650	279	67	34
12	44	93	44	101	52	65	56	216	623	267	64	32
13	49	73	40	97	55	66	54	203	518	255	65	31
14	49	74	42	92	59	65	55	231	447	237	65	31
15	46	81	46	88	61	66	59	237	411	226	60	31
16	44	67	51	84	129	72	71	220	463	222	58	30
17	45	72	56	83	125	67	76	211	437	227	56	29
18	44	66	53	79	115	66	94	241	414	220	55	28
19	43	63	52	76	209	65	129	302	937	205	55	29
20	44	60	52	75	164	65	161	675	918	189	58	30
21	44	66	57	74	137	63	172	733	747	177	53	30
22	41	66	83	74	122	65	174	608	737	164	50	30
23	38	61	71	76	114	63	251	602	740	153	55	30
24	41	56	76	73	108	61	509	657	644	143	54	29
25	41	56	239	70	101	64	439	864	626	142	53	30
26	41	55	743	67	94	67	350	889	663	142	62	31
27	39	53	572	67	90	64	300	787	635	132	61	58
28	37	51	389	67	87	62	317	740	532	124	59	70
29	39	51	296	64	---	65	437	767	496	119	57	45
30	38	49	296	63	---	63	605	918	543	109	57	40
31	37	---	271	61	---	63	---	839	---	102	55	---
TOTAL	1335	2237	4135	3248	2383	2110	4957	15849	21110	8303	2035	1118
MEAN	43.1	74.6	133	105	85.1	68.1	165	511	704	268	65.6	37.3
MAX	51	233	743	237	209	84	605	993	1300	560	97	70
MIN	37	36	40	61	39	61	54	203	411	102	50	28
AC-FT	2650	4440	8200	6440	4730	4190	9830	31440	41870	16470	4040	2220

CAL YR 1980 TOTAL 73226 MEAN 200 MAX 1210 MIN 20 AC-FT 145200
WTR YR 1981 TOTAL 68820 MEAN 189 MAX 1300 MIN 28 AC-FT 136500

13330500 BEAR CREEK NEAR WALLOWA, OR

LOCATION.--Lat 45°31'37", long 117°33'05", in NW¼NE¼ sec.34, T.1 N., R.42 E., Wallowa County, Hydrologic Unit 17060105, on right bank 30 ft (9 m) downstream from road bridge, 3.0 mi (4.8 km) southwest of Wallowa, and at mile 4.4 (7.1 km).

DRAINAGE AREA.--68 mi² (176 km²), approximately.

PERIOD OF RECORD.--April to September 1915, April 1924 to current year. Monthly discharge only for some periods, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1915, 1927, 1929-30, 1932, 1936-40, 1945, 1949.

GAGE.--Water-stage recorder. Altitude of gage is 3,250 ft (991 m), by barometer. Apr. 13 to Sept. 16, 1915, nonrecording gage at site 1.0 mi (1.6 km) upstream at different datum. Apr. 22, 1924, to Nov. 2, 1931, water-stage recorder at site 1.5 mi (2.4 km) upstream at different datum.

REMARKS.--Records good. No regulation. Diversions for irrigation above station. Water for irrigation in Lostine River basin diverted from Little Bear Creek, a tributary above station, in sec.32, T.1 S., R.43 E.

AVERAGE DISCHARGE.--57 years (water years 1925-81), 113 ft³/s (3.200 m³/s), 81,870 acre-ft/yr (101 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,730 ft³/s (49.0 m³/s) June 15, 1974; maximum gage height, 3.82 ft (1.164 m) Apr. 22, 1936 (from floodmark); minimum daily discharge, 3 ft³/s (0.085 m³/s) Jan. 20, Feb. 1, 1937.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s (17.0 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 26	0730	647	18.3	2.69	0.820	May 20	2200	731	20.7	2.79	0.850
May 1	1800	680	19.3	2.73	0.832	June 8	1830	*788	22.3	*2.85	0.869

Minimum, 9.7 ft³/s (0.27 m³/s) Sept. 17-19.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	13	21	193	25	78	67	623	374	179	24	12
2	16	14	28	170	21	70	65	520	367	154	23	12
3	16	14	36	148	22	65	65	380	325	142	23	12
4	15	14	43	129	22	62	62	305	331	134	22	12
5	15	14	40	113	22	57	62	251	380	129	21	12
6	15	20	39	104	24	53	60	207	570	131	20	12
7	14	92	34	94	22	48	60	179	457	166	19	12
8	14	94	28	86	24	45	59	163	680	131	19	11
9	14	74	25	78	22	43	60	151	697	118	19	11
10	13	59	27	70	15	41	57	148	585	104	18	11
11	13	52	30	67	20	40	55	142	493	97	18	11
12	14	44	27	65	24	40	57	129	457	86	17	11
13	15	33	24	57	27	41	53	121	387	80	17	10
14	18	40	27	52	30	41	53	142	337	74	17	10
15	15	35	26	48	74	44	60	154	300	67	17	10
16	15	26	32	46	148	50	84	148	320	62	16	10
17	15	30	31	44	215	44	104	142	305	59	15	10
18	15	26	30	42	207	41	129	157	286	53	15	10
19	15	25	31	40	325	41	176	186	507	48	16	10
20	15	23	29	37	296	41	215	513	480	45	16	10
21	15	26	40	36	243	40	219	647	394	43	15	10
22	15	29	72	37	197	43	204	527	361	39	15	10
23	14	24	70	41	170	39	264	487	331	36	14	10
24	15	21	76	40	154	39	493	487	291	34	14	10
25	14	20	200	36	134	45	407	570	273	35	14	11
26	14	21	600	35	116	57	320	548	273	36	13	11
27	14	21	507	35	101	60	273	487	247	31	13	22
28	14	21	361	35	88	62	277	442	207	29	13	20
29	14	21	282	34	---	68	355	435	190	27	13	14
30	14	21	255	31	---	67	480	493	190	26	13	13
31	14	---	227	30	---	67	---	435	---	26	13	---
TOTAL	456	967	3298	2073	2788	1572	4895	10319	11395	2421	522	350
MEAN	14.7	32.2	106	66.9	99.6	50.7	163	333	380	78.1	16.8	11.7
MAX	18	94	600	193	325	78	493	647	697	179	24	22
MIN	13	13	21	30	15	39	53	121	190	26	13	10
AC-FT	904	1920	6540	4110	5530	3120	9710	20470	22600	4800	1040	694

CAL YR 1980 TOTAL 40558 MEAN 111 MAX 600 MIN 13 AC-FT 80450
WTR YR 1981 TOTAL 41056 MEAN 112 MAX 697 MIN 10 AC-FT 81430

13331500 MINAM RIVER AT MINAM, OR
(Hydrologic bench-mark station)

LOCATION.--Lat 45°37'12", long 117°43'32", in SW¼SW¼ sec.29, T.2 N., R.41 E., Wallowa County, Hydrologic Unit 17060105, on left bank 2.3 mi (3.7 km) downstream from Squaw Creek, 0.3 mi (0.5 km) west of Minam, and at mile 0.3 (0.5 km).

DRAINAGE AREA.--240 mi² (622 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1912 to March 1914, September 1965 to current year. Monthly discharge only for some periods, published in WSP 1317.

GAGE.--Water-stage recorder. Datum of gage is 2,540.48 ft (774.338 m) National Geodetic Vertical Datum of 1929. June 1912 to March 1914, nonrecording gage at approximately same site at different datum.

REMARKS.--Water-discharge records good. No regulation or diversion above station.

AVERAGE DISCHARGE.--17 years, 470 ft³/s (13.31 m³/s), 26.59 in/yr (675 mm/yr), 340,500 acre-ft/yr (420 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,260 ft³/s (177 m³/s) June 16, 1974, gage height, 6.89 ft (2.100 m); maximum gage height, 7.3 ft (2.23 m) May 28, 1913, datum then in use; minimum discharge, 10 ft³/s (0.28 m³/s) Dec. 6, 1972, Jan. 10, 1973, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,450 ft³/s (41.1 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 26	1130	1,980	56.1	3.96	1.207	June 8	2300	*2,790	78.7	*4.54	1.384
May 1	2230	2,540	71.9	4.45	1.356	June 20	0200	1,770	50.1	3.57	1.088
May 26	0030	2,120	60.0	4.09	1.247						

Minimum, 61 ft³/s (1.728 m³/s) Sept. 18, 19.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	71	102	567	155	342	393	2160	1560	912	182	87
2	84	75	117	517	152	324	379	2040	1470	813	179	85
3	82	76	164	470	161	311	369	1550	1320	751	172	83
4	80	76	203	429	152	302	342	1320	1320	725	165	80
5	78	78	196	393	161	286	328	1090	1430	718	162	78
6	76	89	173	365	180	262	324	947	2040	725	155	78
7	75	183	152	342	146	258	311	863	1810	912	148	75
8	73	258	130	319	149	254	286	776	2490	686	145	73
9	73	177	110	307	152	239	294	718	2430	564	139	71
10	71	158	115	277	124	255	273	711	1980	507	136	71
11	71	140	120	262	112	231	273	705	1710	473	133	68
12	75	134	120	217	180	235	277	649	1660	441	130	68
13	105	110	110	217	190	235	265	619	1480	416	127	66
14	114	91	120	210	307	235	265	667	1300	386	127	66
15	100	90	130	203	393	231	290	724	1170	366	123	64
16	98	105	120	200	711	265	393	680	1190	348	118	64
17	91	114	130	217	1050	246	418	661	1180	339	115	63
18	89	107	130	206	815	235	470	724	1090	325	112	62
19	86	107	120	203	1270	235	590	842	1480	312	112	62
20	84	102	130	200	1090	231	667	1080	1650	294	118	64
21	86	110	158	196	795	224	655	1340	1480	277	112	64
22	84	127	282	193	649	239	602	1210	1390	265	106	64
23	78	114	286	210	573	231	680	1200	1380	253	103	64
24	76	100	273	220	528	228	1280	1330	1240	241	98	64
25	78	90	680	196	480	250	1170	1680	1160	237	95	66
26	80	100	1750	186	429	355	990	1930	1140	233	93	71
27	78	110	1320	190	393	374	890	1770	1130	221	90	95
28	75	110	954	193	365	379	883	1650	993	210	87	152
29	73	107	743	200	---	393	1050	1650	905	206	87	98
30	73	110	674	196	---	379	1390	1880	890	199	87	82
31	73	---	631	186	---	374	---	1770	---	192	90	---
TOTAL	2545	3419	10443	8287	11862	8618	16797	36936	43468	13547	3846	2248
MEAN	82.1	114	337	267	424	278	560	1191	1449	437	124	74.9
MAX	114	258	1750	567	1270	393	1390	2160	2490	912	182	152
MIN	71	71	102	186	112	224	265	619	890	192	87	62
CFSM	.34	.48	1.40	1.11	1.77	1.16	2.33	4.96	6.04	1.82	.52	.31
IN.	.39	.53	1.62	1.28	1.84	1.34	2.60	5.73	6.74	2.10	.60	.35
AC-FT	5050	6780	20710	16440	23530	17090	33320	73260	86220	26870	7630	4460

CAL YR 1980 TOTAL 165423 MEAN 452 MAX 2490 MIN 64 CFSM 1.88 IN 25.64 AC-FT 328100
WTR YR 1981 TOTAL 162016 MEAN 444 MAX 2490 MIN 62 CFSM 1.85 IN 25.11 AC-FT 321400

13331500 MINAM RIVER AT MINAM, OR--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1965 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 27.0°C July 23, 27, 1977; minimum, 0.0°C on many days during winter periods each year.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 25.5°C Aug. 10, 11, 15, 16; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
NOV												
04...	0930	80	59	7.4	6.0	11.4	<1	K1	25	.00	7.7	1.4
24...	1000	120	47	6.9	.0	13.2	<1	<1	19	--	5.6	1.3
DEC												
22...	1045	351	54	6.9	.0	13.0	53	180	18	.00	4.9	1.4
FEB												
03...	1010	170	54	7.0	.0	13.2	K1	K1	23	--	6.6	1.7
MAR												
02...	1030	307	55	6.9	1.0	12.8	<1	<1	22	--	6.1	1.6
31...	0930	365	54	6.7	3.5	12.2	--	--	23	.00	6.5	1.6
MAY												
04...	1100	1120	33	6.6	4.5	11.8	K8	K1	12	.00	3.7	.8
19...	0930	880	36	6.3	8.0	10.4	K7	K6	15	.00	4.4	.9
JUN												
22...	1030	1240	33	6.2	10.5	10.0	K3	K1	15	.00	4.6	.8
JUL												
27...	1055	237	46	6.8	18.5	8.6	K1	K4	19	--	5.9	1.1
AUG												
25...	0900	105	56	7.0	15.0	9.2	K19	K770	20	2.0	5.9	1.3
SEP												
29...	0840	98	55	6.6	8.0	10.2	87	45	20	--	5.9	1.3

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)
NOV											
04...	2.2	1.1	30	<1.0	.4	.1	<.10	.010	.40	.010	.48
24...	2.1	1.2	21	<1.0	.4	.2	<.10	.040	.45	.050	3.70
DEC											
22...	1.9	1.2	30	1.9	2.7	.1	.25	.110	.76	.110	1.10
FEB											
03...	2.4	1.1	23	1.3	.3	.1	<.10	.040	.25	.030	.22
MAR											
02...	2.4	1.1	29	1.6	.3	.6	<.10	.080	.27	.070	.44
31...	2.6	1.4	29	1.2	.3	.1	<.10	.050	.48	.050	.90
MAY											
04...	1.7	.8	16	1.4	.1	.1	<.10	.110	.34	.110	.42
19...	2.3	.8	19	<1.0	.1	<.1	<.10	.040	.33	.070	.43
JUN											
22...	1.8	.8	--	1.3	.1	<.1	<.10	.080	.68	--	.80
JUL											
27...	1.9	1.1	--	<1.0	.2	<.1	.11	.200	.38	--	.40
AUG											
25...	2.3	1.3	18	<5.0	.1	<.1	<.10	.070	.43	.090	.63
SEP											
29...	2.1	1.2	--	5.0	1.2	.1	<.10	.020	.89	.020	.93

13331500 MINAM RIVER AT MINAM, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C)	CARBON, ORGANIC TOTAL (MG/L AS C)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
NOV											
04...	.48	.020	.040	--	--	2.8	17	42	48	3	.65
24...	3.7	.020	.020	--	--	1.7	18	50	42	1	.32
DEC											
22...	1.3	.070	.040	--	--	7.4	19	56	52	38	36
FEB											
03...	.22	.020	.030	--	--	1.7	--	58	--	1	.46
MAR											
02...	.44	.030	.080	--	--	3.3	21	53	52	1	.83
31...	.90	.050	.050	--	--	3.5	24	62	55	5	4.9
MAY											
04...	.43	.030	.040	3.0	.2	--	14	39	32	12	36
19...	.43	.020	.030	--	--	1.8	15	32	36	5	12
JUN											
22...	.80	.020	.040	--	--	1.7	15	32	39	5	17
JUL											
27...	.50	.020	.020	--	--	--	16	39	--	2	1.3
AUG											
25...	.63	.010	.010	--	--	2.1	17	45	--	2	.57
SEP											
29...	.93	$.010	.020	2.6	.1	--	16	47	40	1	.26

DATE	ARSENIC DISSOLVED (UG/L AS AS)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
MAY								
04...	1	1	10	<100	<1	1	<10	20
SEP								
29...	<1	1	12	<100	<1	<1	4	10

DATE	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)
MAY									
04...	<3	<10	10	45	300	13	37	1	10
SEP									
29...	<3	<10	6	14	250	<10	6	<1	10

DATE	MERCURY DISSOLVED (UG/L AS HG)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
MAY								
04...	<.1	.4	<1	<1	<1	<1	6	40
SEP								
29...	<.1	.1	<1	<1	<1	<1	5	20

13331500 MINAM RIVER AT MINAM, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
SEP 29...	<1.0	<.4	1.5	<.4	1.5	<.4	.10	.11

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	ALDRIN, TOTAL (UG/L)	LINDANE TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)
SEP 29...	.00	.00	.00	.00	.00	.00	.00	.00	.00	0	.00	.00

DATE	METH-OXY-CHLOR, TOTAL (UG/L)	PCB, TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
SEP 29...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
SEP 29...	.0	.0	.0	.0	.0	.0	.0	.0	.0	0

13331500 MINAM RIVER AT MINAM, OR--Continued

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

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	15.0	8.0	6.0	4.0	.5	.0	4.0	3.5	1.5	.0	5.0	.5
2	15.0	7.5	8.0	5.0	.0	.0	4.0	4.0	1.0	.0	5.5	.5
3	15.5	7.5	7.5	5.5	4.5	.0	4.0	3.0	1.5	.0	4.5	1.0
4	15.5	8.5	9.5	6.0	4.0	1.5	3.0	2.5	.0	.0	4.5	2.5
5	15.5	7.5	7.0	4.5	1.5	.5	2.5	1.5	1.0	.0	5.0	2.5
6	16.0	8.5	7.0	6.0	1.0	.0	2.5	1.0	1.5	.0	5.5	.5
7	16.0	9.0	8.0	7.0	.0	.0	1.5	.0	1.5	.0	4.0	.0
8	15.5	9.0	8.0	6.0	.0	.0	1.5	1.0	2.0	.0	6.0	3.5
9	13.5	7.0	6.0	5.0	.0	.0	2.0	.5	.0	.0	7.0	2.5
10	11.5	4.5	5.5	3.0	.0	.0	.5	.0	.0	.0	7.5	1.0
11	12.0	6.0	4.0	2.5	.0	.0	.0	.0	.0	.0	7.5	1.5
12	10.5	8.0	4.0	1.0	.0	.0	.0	.0	.0	.0	8.0	1.5
13	9.5	7.5	1.5	.0	.0	.0	.0	.0	.0	.0	8.0	2.0
14	8.5	6.0	.0	.0	.0	.0	.0	.0	2.0	.0	8.5	2.5
15	8.0	6.5	2.0	.0	.0	.0	.0	.0	3.5	.5	8.0	2.5
16	10.0	5.5	1.0	.0	.0	.0	.0	.0	3.5	3.0	6.0	4.0
17	9.5	4.5	2.5	.0	.0	.0	.0	.0	4.5	3.5	7.0	2.5
18	8.0	3.5	3.5	1.0	.0	.0	.0	.0	5.5	3.5	5.5	1.5
19	9.0	3.0	2.5	.0	.0	.0	1.0	.0	4.5	3.5	6.0	2.5
20	8.5	3.5	2.5	.0	.0	.0	1.5	.0	3.5	3.0	6.0	4.0
21	10.0	5.5	2.5	.0	.0	.0	3.0	1.0	4.5	2.5	8.5	2.5
22	7.5	2.5	4.0	1.5	.0	.0	3.0	2.5	5.0	2.5	7.5	5.0
23	5.5	.5	1.0	.5	1.5	.0	4.0	3.0	5.5	2.5	6.5	3.5
24	5.0	1.0	1.0	.0	3.0	1.5	4.0	3.0	4.0	2.5	7.5	3.0
25	6.0	3.0	.0	.0	5.0	3.0	3.5	1.0	4.0	2.0	6.0	5.5
26	7.0	4.0	.0	.0	5.0	5.0	1.5	.0	4.0	1.0	6.0	5.0
27	---	---	.5	.0	5.0	4.5	1.0	.5	5.0	1.5	9.5	4.0
28	6.0	1.0	2.0	.5	4.5	3.0	3.0	.5	5.0	.5	8.0	4.0
29	5.5	.5	3.0	1.5	3.5	2.0	3.0	2.0	---	---	5.0	3.5
30	5.0	1.0	2.0	.5	5.0	3.5	2.5	2.0	---	---	5.0	3.0
31	6.5	2.5	---	---	4.5	4.0	3.0	1.0	---	---	5.0	3.5
MONTH	16.0	.5	9.5	.0	5.0	.0	4.0	.0	5.5	.0	9.5	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	6.0	3.5	8.5	6.0	9.5	5.5	15.0	11.5	22.5	14.0	20.5	13.5
2	6.5	3.0	6.5	4.5	9.5	7.5	15.5	10.5	23.0	15.5	20.0	13.0
3	5.5	4.0	7.5	3.5	9.0	6.5	17.0	11.0	23.0	16.5	19.5	11.5
4	8.0	3.0	6.5	4.5	9.0	8.0	18.5	13.0	23.0	14.5	19.5	12.5
5	6.0	3.5	6.0	3.5	11.5	7.5	17.5	15.0	23.5	15.0	20.5	12.0
6	5.0	3.0	6.0	3.5	10.5	8.0	15.5	12.5	24.0	15.0	20.5	12.0
7	7.5	3.0	6.0	4.5	8.0	6.5	12.5	8.5	24.5	15.5	21.0	12.5
8	5.5	2.5	9.5	4.5	6.5	6.5	13.5	7.0	24.5	16.0	22.5	13.5
9	7.5	3.5	9.5	5.5	8.5	6.5	16.0	9.0	24.5	16.5	22.0	14.0
10	8.0	3.0	10.0	6.5	9.5	6.5	16.0	11.5	25.5	16.5	21.5	13.5
11	6.0	3.5	7.5	6.5	10.5	7.5	16.5	10.0	25.5	16.5	20.5	12.0
12	6.5	4.0	9.5	5.5	9.0	6.5	18.0	11.5	25.0	16.0	21.0	12.0
13	8.5	2.5	8.5	5.0	8.5	6.0	17.0	12.5	24.0	16.5	20.5	12.0
14	10.5	3.0	7.5	7.0	9.0	6.5	17.5	11.0	24.0	18.0	20.0	11.0
15	11.5	4.5	9.5	6.0	11.5	6.5	19.0	11.5	25.5	16.5	20.5	11.0
16	11.0	6.5	9.0	6.0	10.0	8.0	20.5	12.5	25.5	17.0	20.5	11.5
17	11.0	5.0	11.0	6.0	10.0	7.0	21.0	14.5	25.0	16.5	21.0	12.0
18	11.5	5.5	10.0	8.0	9.5	8.0	21.0	15.0	23.5	17.0	21.0	12.5
19	9.0	7.5	9.5	7.0	10.5	9.0	21.0	14.5	22.5	17.0	18.0	13.0
20	9.5	6.5	9.0	7.0	10.0	8.5	21.0	14.0	22.5	16.0	15.0	9.5
21	8.0	6.0	7.5	6.5	11.0	8.5	21.0	14.0	22.5	14.0	14.5	10.5
22	9.5	6.0	6.5	5.5	12.0	9.5	21.0	13.5	22.0	13.0	14.5	8.5
23	12.0	6.0	11.0	6.5	12.5	9.5	21.0	13.5	23.5	13.5	13.5	6.0
24	9.5	6.5	9.0	7.5	12.0	8.0	21.0	13.5	23.5	15.0	10.5	6.0
25	7.0	5.0	9.0	7.5	14.0	9.5	20.5	15.0	23.0	15.0	11.0	7.5
26	6.0	5.5	9.5	6.5	15.0	11.0	21.5	14.0	23.0	14.0	8.0	6.0
27	9.0	4.5	9.5	6.0	12.5	10.0	22.5	14.5	22.0	13.5	9.0	8.0
28	8.5	6.5	10.0	6.0	12.5	8.5	23.0	15.5	21.5	13.0	12.0	8.5
29	10.5	6.5	11.0	7.0	14.5	9.5	21.0	15.0	19.0	14.5	11.0	8.5
30	10.5	6.0	10.0	7.5	16.5	11.5	21.0	13.0	18.0	14.5	12.5	6.0
31	---	---	9.5	6.0	---	---	21.5	13.0	20.0	11.5	---	---
MONTH	12.0	2.5	11.0	3.5	16.5	5.5	23.0	7.0	25.5	11.5	22.5	6.0

13332500 GRANDE RONDE RIVER AT RONDOWA, OR

LOCATION.--Lat 45°43'36", long 117°46'59", in SW¼NW¼ sec.23, T.3 N., R.40 E., Wallowa County, Hydrologic Unit 17060106, on right bank at Rondowa, 500 ft (152 m) downstream from Wallowa River, 13 mi (21 km) northeast of Elgin, and at mile 81.4 (131.0 km).

DRAINAGE AREA.--2,555 mi² (6,617 km²).

PERIOD OF RECORD.--October 1926 to current year.

REVISED RECORDS.--WSP 1093: 1928-29, 1932-33, 1936, 1938, 1939(M), 1943. WSP 1397: 1927. WSP 1447: 1927.

GAGE.--Water-stage recorder. Datum of gage is 2,281.87 ft (695.514 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent. Flow slightly regulated by Wallowa Lake (see station 13326000) and small reservoirs. Diversions for irrigation above station, chiefly in vicinity of La Grande, Enterprise, and Wallowa; one transbasin diversion from Sheep Creek in Imnaha River basin for irrigation in Wallowa Valley.

AVERAGE DISCHARGE.--55 years, 2,140 ft³/s (60.60 m³/s), 1,550,000 acre-ft/yr (1.91 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,700 ft³/s (700 m³/s) Jan. 30, 1965, gage height, 10.93 ft (3.331 m); minimum, 179 ft³/s (5.07 m³/s) Aug. 24, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,200 ft³/s (176 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 26	0800	8,610	244	5.86	1.786	May 26	0330	7,570	214	5.45	1.661
Feb. 19	0100	*11,300	320	*6.86a	2.091	June 9	0100	8,900	252	5.97	1.820
May 2	0100	8,380	237	5.77	1.759	June 20	0330	6,230	176	4.89	1.490

Minimum, 275 ft³/s (7.79 m³/s) Sept. 10.

a From floodmark.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	604	556	678	2730	1060	2510	4130	7350	5290	2700	540	385
2	604	556	765	2480	970	2350	3940	7470	4830	2400	534	375
3	595	548	1170	2260	951	2230	3750	6160	4380	2200	528	356
4	587	556	1200	2070	922	2150	3530	5470	4150	2150	492	360
5	556	563	1160	1920	932	2060	3290	4740	4320	2100	470	360
6	548	612	1070	1800	970	1950	3080	4210	6110	2160	460	365
7	528	1060	932	1680	894	1840	2880	3910	5750	2880	435	343
8	492	1430	712	1570	840	1810	2710	3670	7500	2380	435	334
9	498	1130	645	1500	800	1760	2680	3380	8460	2070	390	304
10	516	1050	610	1410	640	1680	2540	3220	7620	1880	410	279
11	522	951	670	1350	500	1640	2430	3120	6900	1770	395	296
12	540	894	739	1290	560	1620	2400	2930	6920	1680	385	304
13	620	792	687	1240	800	1600	2340	2760	6210	1600	395	304
14	783	712	695	1140	2200	1600	2250	2810	5430	1500	405	304
15	712	747	774	1070	2490	1590	2230	3130	4650	1390	385	313
16	695	704	730	1010	6870	1730	2430	3120	4490	1280	395	296
17	704	730	765	1060	7330	1740	2600	3080	4560	1190	415	308
18	687	712	774	1070	7060	1690	2810	3170	4130	1120	430	291
19	678	712	774	1100	10300	1670	3170	3380	5270	1030	430	296
20	661	695	792	1080	8330	1640	3530	4430	5850	970	450	321
21	653	712	875	1070	6690	1600	3710	6130	5360	866	455	338
22	628	820	1880	1060	5500	1730	3640	5890	5080	747	445	356
23	620	765	1730	1100	4560	1890	3860	5680	4940	661	420	380
24	604	721	1700	1230	3970	1840	5660	5890	4430	604	420	390
25	587	661	4360	1140	3600	1950	5680	6480	4050	587	415	405
26	604	695	8020	1080	3240	3150	5120	7160	3920	620	390	420
27	587	678	6620	1060	2960	3810	4830	5640	3660	620	375	522
28	579	687	4940	1090	2710	3950	4560	6180	3150	612	370	721
29	571	704	3860	1190	---	3970	4890	5870	2810	571	375	620
30	563	712	3360	1200	---	3910	5660	6160	2650	612	395	563
31	556	---	3070	1160	---	3910	---	5940	---	587	395	---
TOTAL	18682	22865	56757	43210	88649	68570	106330	149530	152870	43537	13234	11209
MEAN	603	762	1831	1394	3166	2212	3544	4824	5096	1404	427	374
MAX	783	1430	8020	2730	10300	3970	5680	7470	8460	2880	540	721
MIN	492	548	610	1010	500	1590	2230	2760	2650	571	370	279
AC-FT	37060	45350	112600	85710	175800	136000	210900	296600	303200	86360	26250	22230

CAL YR 1980 TOTAL 751265 MEAN 2055 MAX 8020 MIN 390 AC-FT 1490000
WTR YR 1981 TOTAL 775443 MEAN 2125 MAX 10300 MIN 279 AC-FT 1538000

13333000 GRANDE RONDE RIVER AT TROY, OR

LOCATION.--Lat 45°56'47", long 117°26'54", in NE¼NW¼ sec.4, T.5 N., R.43 E., Wallowa County, Hydrologic Unit 17060106, on left bank 500 ft (152 m) downstream from bridge at Troy, 600 ft (183 m) downstream from Wenaha River, and at mile 45.2 (72.7 km).

DRAINAGE AREA.--3,275 mi² (8,482 km²).

PERIOD OF RECORD.--August 1944 to current year. Monthly discharge only August 1944, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1946(M), 1948-50.

GAGE.--Water-stage recorder. Datum of gage is 1,585.98 ft (483.407 m) National Geodetic Vertical Datum of 1929. Aug. 17, 1944, to Sept. 30, 1949, nonrecording gage at site 500 ft (152 m) upstream at datum 10.85 ft (3.307 m) lower. Oct. 1, 1949, to Sept. 5, 1963, water-stage recorder at site 500 ft (152 m) upstream at datum 1.15 ft (0.351 m) higher.

REMARKS.--Records excellent. Flow slightly regulated by Wallowa Lake (see station 13326000) and small reservoirs. Diversions for irrigation above station, chiefly in vicinity of La Grande, Enterprise, and Wallowa; one transbasin diversion from Big Sheep Creek and tributaries in Imnaha River basin for irrigation in Wallowa Valley.

AVERAGE DISCHARGE.--37 years, 3,100 ft³/s (87.79 m³/s), 2,246,000 acre-ft/yr (2.77 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,200 ft³/s (1,200 m³/s) Dec. 23, 1964, gage height, 11.25 ft (3.429 m); minimum, 344 ft³/s (9.74 m³/s) Aug. 19-21, 23, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 ft³/s (255 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 26	1100	15,700	445	7.66	2.335	May 2	0500	9,700	275	6.44	1.963
Feb. 16	2200	17,900	507	8.05	2.454	June 9	0600	11,000	312	6.70	2.042
Feb. 19	0530	*18,200	515	*8.14	2.481						

Minimum, 454 ft³/s (12.9 m³/s) Sept. 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	784	734	1000	4320	1530	3740	5730	8440	6100	3280	821	596
2	784	747	1060	3830	1370	3510	5560	9060	5630	3030	807	585
3	771	747	1670	3450	1310	3310	5270	7520	5300	2770	792	561
4	759	747	2020	3110	1240	3170	5020	6690	5020	2670	764	550
5	747	747	2060	2840	1190	3030	4800	5890	5110	2590	737	550
6	722	784	1780	2650	1230	2870	4560	5300	6420	2640	710	561
7	710	1210	1540	2450	1120	2690	4300	4990	6500	3360	683	550
8	686	1960	1260	2270	1060	2640	4020	4680	8270	3090	658	528
9	662	1530	1100	2120	1010	2570	4020	4360	10700	2670	633	506
10	674	1390	900	1980	822	2470	3860	4110	9650	2420	621	475
11	698	1260	960	1880	628	2420	3680	3980	8530	2270	633	475
12	710	1180	1060	1750	722	2370	3590	3800	8140	2140	608	495
13	759	1090	1040	1670	1030	2370	3540	3560	7440	2040	608	506
14	971	971	1000	1540	2380	2350	3390	3540	6540	1940	621	506
15	957	957	1120	1410	3940	2350	3390	4020	5730	1820	621	517
16	875	957	1070	1310	10600	2490	3650	3980	5330	1690	596	528
17	875	929	1100	1260	14000	2540	3920	3950	5530	1580	608	517
18	862	957	1150	1370	11400	2470	4170	4020	5170	1490	645	528
19	849	943	1130	1370	17200	2400	4560	4200	5690	1370	658	528
20	835	929	1130	1390	14100	2400	4960	4830	6610	1310	670	550
21	822	943	1210	1340	10700	2350	5110	6610	6130	1200	683	596
22	810	1130	2680	1360	8530	2440	5050	6540	5760	1090	670	621
23	784	1090	3550	1410	7120	2740	5270	6350	5630	974	658	658
24	771	1010	2940	1650	6130	2670	7160	6460	5330	911	621	670
25	759	943	6930	1560	5460	2740	7440	6840	4990	866	633	710
26	771	929	14800	1470	4890	4240	6690	7970	4740	896	608	723
27	784	943	11600	1420	4450	5300	6270	7440	4500	911	585	750
28	759	971	8620	1440	4080	5400	5930	6920	3950	881	573	881
29	759	985	6490	1620	---	5370	6100	6540	3510	851	573	896
30	747	1030	5410	1670	---	5300	6760	6650	3280	851	585	792
31	734	---	4930	1650	---	5240	---	6650	---	881	608	---
TOTAL	24190	30743	94310	60560	139242	97950	147770	175890	181230	56482	20291	17909
MEAN	780	1025	3042	1954	4973	3160	4926	5674	6041	1822	655	597
MAX	971	1960	14800	4320	17200	5400	7440	9060	10700	3360	821	896
MIN	662	734	900	1260	628	2350	3390	3540	3280	851	573	475
AC-FT	47980	60980	187100	120100	276200	194300	293100	348900	359500	112000	40250	35520

CAL YR 1980 TOTAL 1011514 MEAN 2764 MAX 14800 MIN 594 AC-FT 2006000
WTR YR 1981 TOTAL 1046567 MEAN 2867 MAX 17200 MIN 475 AC-FT 2076000

13353000 SNAKE RIVER BELOW ICE HARBOR DAM, WA

LOCATION.--Lat 46°14'53", long 118°52'43", in NE¼SW¼, sec.24, T.9 N., R.31 E., Walla Walla County, Hydrologic Unit 17060110, in powerhouse forebay pier P-1 on south side of Bay 1 at Ice Harbor Dam, 8.0 mi (12.9 km) northeast of Burbank, and at mile 9.7 (15.6 km).

DRAINAGE AREA.--108,500 mi² (281,000 km²), approximately.

PERIOD OF RECORD.--October 1907 to March 1917 (gage heights only October 1907 to August 1909), March 1962 to current year. Published as "at Burbank" prior to 1911 and as "near Burbank" 1912-17. Chemical analyses October 1965 to September 1969, October 1971 to September 1972. For records collected at site 7.5 mi (12.1 km) downstream see station 13353200.

REVISED RECORDS.--WSP 1317: Drainage area.

GAGE.--Watt-hour meters on each turbine in Ice Harbor Dam powerhouse. Elevations are National Geodetic Vertical Datum of 1929. Oct. 2, 1907, to Mar. 31, 1917, nonrecording gage at site approximately 2 mi (3.2 km) downstream at datum 300 ft (91 m) higher. Mar. 23, 1962, to Sept. 30, 1968, water-stage recorder 1.0 mi (1.6 km) downstream at National Geodetic Vertical Datum of 1929.

REMARKS.--Records computed from power output, flow over spillway, flow through fish ladder, and lockage records at Ice Harbor Dam. Diversions above station for irrigation of over 4,090,000 acres (16,600 km²). Flow regulated by Lake Sacajawea and many storage reservoirs and powerplants upstream.

COOPERATION.--Records furnished by Corps of Engineers. Records not reviewed.

AVERAGE DISCHARGE.--26 years (water years 1910-16, 1963-81), 55,030 ft³/s (1,558 m³/s), 39,869,000 acre-ft/yr (49,200 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 312,000 ft³/s (8,840 m³/s) June 19, 1974; no flow momentarily Aug. 27, 1965 (result of testing at Ice Harbor Dam).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 30, 1948, reached an elevation of 361.9 ft (110.31 m) at a site 0.7 mi (1.1 km) downstream from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum hourly discharge, 205,600 ft³/s (5,820 m³/s) June 9; maximum forebay elevation, 440.50 ft (134.264 m) Dec. 28; minimum hourly discharge, 2,100 ft³/s (59.5 m³/s) Dec. 25; minimum forebay elevation, 436.72 ft (133.112 m) Jan. 15.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26600	12400	28100	60400	24500	31800	43200	86000	138000	54400	23500	14200
2	36900	12800	32400	66700	37700	39000	38600	125000	135000	54000	9500	23400
3	35900	28100	38700	60000	49400	45100	41200	125000	114000	43200	17400	30600
4	11400	32500	34800	59800	53800	43600	45600	131000	142000	43900	11800	32000
5	11700	22000	36500	60300	37000	40700	31100	113000	124000	42900	18100	31200
6	20900	27700	40400	54100	37400	47500	37600	87600	107000	43300	19700	15500
7	18900	25700	35400	55300	15300	29100	41100	82800	132000	49700	36800	8800
8	17500	26600	42400	59600	11700	19800	40100	78000	124000	49100	15900	38200
9	28300	44600	42600	53300	36800	30600	36200	58600	187000	56800	11400	26300
10	22800	38900	42900	36600	34500	37500	29600	55200	186000	48000	23800	28500
11	15100	34000	42500	11600	42800	33400	25800	72300	160000	32700	20400	31500
12	17300	44000	38800	47800	29900	35100	11500	69700	147000	24200	13200	29000
13	20100	44000	34700	43000	26700	35500	43300	60100	150000	43200	12600	9000
14	24600	37900	24100	52300	17200	31200	35100	66400	148000	41400	19400	25500
15	21600	25800	34100	48800	27000	23200	34400	65600	136000	31500	18200	22300
16	24400	22400	37000	45800	42700	31200	28300	62900	127000	27900	9200	34700
17	29600	30200	39900	21200	69900	41500	27600	56300	127000	36600	22700	27400
18	21200	31200	36400	11400	64300	47300	21200	57700	130000	38300	20000	25300
19	19100	27700	36800	27600	61100	46200	30200	49100	123000	18000	18900	26400
20	24300	37500	26800	25100	82000	46300	47200	51800	128000	39600	11000	11600
21	26900	41700	28700	22400	63800	28100	55200	69600	136000	27500	16300	27400
22	32800	35300	46700	29900	61500	27700	56200	77700	110000	31600	16900	33200
23	27000	24900	43200	38800	60500	40500	67400	102000	99900	28100	18200	31600
24	25300	30200	48400	22900	60500	35000	81500	99000	111000	19500	12200	27100
25	21600	43500	22400	17500	64300	37000	88500	101000	83900	25200	12800	24700
26	14900	36000	41000	43700	62400	45300	82900	119000	79000	14400	26100	11300
27	30600	24700	83700	34300	56400	35500	83900	135000	73600	37600	30300	16700
28	28900	44700	80500	33000	44500	36700	99100	138000	63600	19700	24200	32700
29	27200	28000	76200	42100	---	44500	93400	130000	65700	19000	9900	26800
30	29900	20300	60300	41400	---	44600	96500	132000	56800	18900	8800	34400
31	23200	---	64100	29900	---	42800	---	131000	---	21600	17900	---
TOTAL	736500	935300	1320500	1256600	1275400	1153100	1493500	2788400	3644500	1081800	547100	757300
MEAN	23760	31180	42600	40540	45550	37200	49780	89950	121500	34900	17650	25240
MAX	36900	44700	83700	66700	82000	47500	99100	138000	187000	56800	36800	38200
MIN	11400	12400	22400	11400	11700	19800	11500	49100	56800	14400	8800	8800
AC-FT	1461000	1855000	2619000	2492000	2530000	2287000	2962000	5531000	7229000	2146000	1085000	1502000

CAL YR 1980 TOTAL 17096100 MEAN 46710 MAX 138000 MIN 6100 AC-FT 33910000
WTR YR 1981 TOTAL 16990000 MEAN 46550 MAX 187000 MIN 8800 AC-FT 33700000

WALLA WALLA RIVER BASIN

14010000 SOUTH FORK WALLA WALLA RIVER NEAR MILTON, OR

LOCATION.--Lat 45°49'48", long 118°10'08", in NE¼NE¼ sec.15, T.4 N., R.37 E., Umatilla County, Hydrologic Unit 17070102, on right bank 1.0 mi (1.6 km) downstream from Elbow Creek, 13 mi (21 km) southeast of Milton, and at mile 59.1 (95.1 km).

DRAINAGE AREA.--63 mi² (163 km²), approximately.

PERIOD OF RECORD.--February to October 1903, August 1906 to November 1917, May 1931 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as "12 mi (19 km) above Milton" 1903 and as "above Pacific Power & Light Co.'s intake near Milton" 1907-10.

REVISED RECORDS.--WSP 964: Drainage area. WSP 1398: 1912, 1940, drainage area at former site.

GAGE.--Water-stage recorder. Altitude of gage is 2,050 ft (625 m) from river-profile map. Prior to Mar. 23, 1934, water-stage recorder or nonrecording gage at several sites within 1.5 mi (2.4 km) of present site at various datums.

REMARKS.--Records good. No regulation or diversion above station.

AVERAGE DISCHARGE.--60 years (water years 1908-17, 1932-81), 178 ft³/s (5.041 m³/s), 38.37 in/yr (975 mm/yr), 129,000 acre-ft/yr (159 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,530 ft³/s (71.6 m³/s) Jan. 29, 1965, gage height, 5.60 ft (1.707 m); minimum, 72 ft³/s (2.04 m³/s) Feb 14, 1932.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage about 6 ft (2 m) Mar. 31, 1931, present site and datum.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 600 ft³/s (17.0 m³/s) and maximum discharge, 679 ft³/s (19.2 m³/s) Feb. 16, gage height, 2.48 ft (0.756 m); minimum, 93 ft³/s (2.63 m³/s) Nov. 16.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102	96	110	195	148	199	335	345	166	124	116	116
2	102	99	159	185	142	195	288	301	162	123	119	116
3	102	96	210	175	138	183	256	279	159	123	119	116
4	102	96	191	170	135	183	226	270	159	123	119	113
5	99	96	169	160	135	176	222	248	166	124	116	113
6	99	104	152	150	132	169	218	226	195	125	116	113
7	99	155	135	145	125	166	210	218	195	130	116	113
8	99	132	129	140	125	162	206	206	360	125	116	113
9	99	119	122	135	125	155	214	199	404	123	119	113
10	99	113	122	130	116	155	210	195	340	120	116	113
11	99	110	119	125	122	155	210	191	238	118	116	113
12	102	104	122	122	155	152	206	187	256	116	116	113
13	104	99	126	120	187	152	199	187	251	116	116	113
14	129	99	126	118	420	152	195	199	210	116	116	110
15	119	96	126	115	387	155	218	251	199	116	119	110
16	110	96	152	112	596	176	252	226	199	116	116	110
17	104	96	135	110	508	162	261	214	190	116	116	110
18	104	96	132	108	420	159	283	210	180	116	116	110
19	102	99	129	106	513	155	310	210	260	116	116	113
20	102	96	129	105	442	155	301	210	240	116	116	113
21	102	110	145	105	345	155	292	210	220	116	119	113
22	99	135	226	105	293	159	306	203	200	116	119	116
23	96	122	210	155	270	152	366	195	190	116	119	116
24	96	113	230	155	256	152	503	195	180	116	116	113
25	96	110	280	142	239	176	426	210	170	116	116	116
26	96	110	400	142	222	261	360	199	160	116	116	116
27	96	110	320	145	211	340	310	191	145	119	116	138
28	96	122	260	152	203	306	301	183	135	116	116	132
29	96	116	240	159	---	288	306	180	130	116	116	122
30	96	113	220	159	---	279	330	180	125	116	116	119
31	96	---	210	155	---	297	---	173	---	116	116	---
TOTAL	3142	3258	5516	4300	7110	5881	8320	6671	6214	3681	3620	3455
MEAN	101	109	178	139	254	190	277	215	207	119	117	115
MAX	129	155	400	195	596	340	503	345	404	130	119	138
MIN	96	96	110	105	116	152	195	173	125	116	116	110
CFSM	1.60	1.73	2.83	2.21	4.03	3.02	4.40	3.41	3.29	1.89	1.86	1.83
IN.	1.86	1.92	3.26	2.54	4.20	3.47	4.91	3.94	3.67	2.17	2.14	2.04
AC-FT	6230	6460	10940	8530	14100	11660	16500	13230	12330	7300	7180	6850

CAL YR 1980 TOTAL 57667 MEAN 158 MAX 460 MIN 96 CFSM 2.51 IN 34.05 AC-FT 114400
WTR YR 1981 TOTAL 61168 MEAN 168 MAX 596 MIN 96 CFSM 2.67 IN 36.12 AC-FT 121300

NOTE.--No gage-height record Dec. 23 to Jan. 22, June 17 to July 23.

14010800 NORTH FORK WALLA WALLA RIVER NEAR MILTON-FREEWATER, OR

LOCATION.--Lat 45°53'06", long 118°11'06", in SE¼NW¼ sec.28, T.5 N., R.37 E., Umatilla County, Hydrologic Unit 17070102, on right bank 2.8 mi (4.5 km) downstream from Little Meadow Canyon, 8.9 mi (14.3 km) southeast of Milton-Freewater, and at mile 5.6 (9.0 km).

DRAINAGE AREA.--34.4 mi² (89.1 km²).

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,940 ft (591 m), from topographic map.

REMARKS.--Records good except those for April and May, which are fair. No regulation or diversion above station.

AVERAGE DISCHARGE.--12 years, 52.7 ft³/s (1.492 m³/s), 20.80 in/yr (528 mm/yr), 38,180 acre-ft/yr (47.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,040 ft³/s (29.5 m³/s) Jan. 25, 1975, gage height, 6.58 ft (2.006 m), from rating curve extended above 400 ft³/s (11.3 m³/s) on basis of discharge measurement at gage height 5.67 ft (1.728 m) and slope-area measurement at gage height 6.30 ft (1.920 m); minimum, 3.9 ft³/s (0.11 m³/s) July 19-21, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.50 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 26	0900	486	13.8	5.46	1.664	Apr. 24	0300	344	9.74	5.05	1.533
Feb. 16	1530	*624	17.7	*5.81	1.771	June 8	2100	423	12.0	5.06	1.542
Mar. 26	2330	326	9.23	4.97	1.515						

Minimum, 4.5 ft³/s (0.13 m³/s) Oct. 5-8.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	7.7	15	68	57	52	196	83	45	40	11	8.4
2	4.7	7.7	18	57	35	48	159	66	42	37	11	8.4
3	4.7	7.7	33	50	53	45	128	53	39	34	11	8.4
4	4.7	7.7	34	45	31	44	99	57	38	31	11	8.4
5	4.6	7.7	31	41	30	42	92	51	41	29	10	8.4
6	4.5	9.2	27	39	28	38	84	45	69	32	10	8.2
7	4.5	19	25	36	26	37	76	43	65	35	9.7	7.9
8	4.5	19	23	34	25	37	68	41	322	28	9.9	7.4
9	4.7	15	22	32	21	36	84	40	394	26	9.7	7.4
10	4.7	15	21	31	19	35	81	39	330	24	9.6	7.3
11	4.7	14	21	29	21	34	74	39	242	23	9.3	7.4
12	4.8	12	21	27	35	33	64	38	190	22	9.3	7.4
13	5.2	11	22	26	58	33	51	37	152	21	9.3	7.4
14	11	11	22	24	240	32	48	45	120	20	9.3	7.2
15	13	10	23	23	259	31	67	77	97	19	9.3	7.2
16	8.9	10	26	22	554	43	99	75	103	17	9.0	7.2
17	7.3	9.7	27	21	380	39	121	74	95	17	9.0	7.2
18	6.5	9.7	26	20	325	38	147	69	89	16	9.0	6.9
19	6.0	9.7	24	19	339	37	170	66	213	16	9.0	6.9
20	5.7	9.7	23	18	306	36	170	68	198	15	9.0	6.9
21	7.0	9.9	24	18	226	35	182	63	165	14	9.0	7.1
22	8.4	14	38	18	176	37	198	59	140	13	8.9	7.4
23	8.4	14	50	18	140	40	204	57	114	13	8.7	7.7
24	8.4	12	68	34	120	39	270	54	93	12	8.8	7.7
25	8.4	12	184	32	98	51	222	66	78	15	8.7	7.7
26	8.2	12	363	31	80	211	172	59	67	13	8.7	7.7
27	8.0	12	279	31	66	280	129	54	60	12	8.7	11
28	8.0	17	196	33	58	206	102	51	54	12	8.7	12
29	8.0	16	141	38	---	176	89	48	50	11	8.7	10
30	8.0	16	111	40	---	156	83	49	45	11	8.4	9.0
31	7.9	---	84	39	---	165	---	46	---	11	8.4	---
TOTAL	208.1	357.4	2022	994	3766	2166	3729	1712	3748	637	290.1	239.2
MEAN	6.71	11.9	65.2	32.1	135	69.9	124	55.2	125	20.5	9.36	7.97
MAX	13	19	363	68	554	280	270	83	394	40	11	12
MIN	4.5	7.7	15	18	19	31	48	37	38	11	8.4	6.9
CFSM	.20	.35	1.90	.93	3.92	2.03	3.61	1.61	3.63	.60	.27	.23
IN.	.23	.39	2.19	1.07	4.07	2.34	4.03	1.85	4.05	.69	.31	.26
AC-FT	413	709	4010	1970	7470	4300	7400	3400	7430	1260	575	474

CAL YR 1980 TOTAL 16747.0 MEAN 45.8 MAX 363 MIN 4.5 CFSM 1.33 IN 18.11 AC-FT 33220
WTR YR 1981 TOTAL 19868.8 MEAN 54.4 MAX 554 MIN 4.5 CFSM 1.58 IN 21.49 AC-FT 39410

14019200 COLUMBIA RIVER AT MCNARY DAM, NEAR UMATILLA, OR

LOCATION.--Lat 45°56'05", long 119°17'45", in NE¼ sec.10, T.5 N., R.28 E., Umatilla County, Hydrologic Unit 17070101, in powerhouse forebay between generator units 2 and 3 at McNary Dam, 2.5 mi (4.0 km) northeast of Umatilla, 3.0 mi (4.8 km) upstream from Umatilla River, and at mile 292.0 (469.8 km).

DRAINAGE AREA.--214,000 mi^2 (554,300 km^2), approximately.

PERIOD OF RECORD.--October 1950 to current year. Gage-height records collected at site at Umatilla since 1876 are contained in reports of National Weather Service. Prior to October 1966, published as "below McNary Dam."

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1966, at site 1.2 mi (1.9 km) downstream (tailwater) at 240.04 ft (73.164 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records computed from power output and flow over spillway at McNary dam. Considerable regulation by many reservoirs upstream. Diurnal fluctuation caused by powerplant and gates at McNary Dam since beginning of operation in April 1953. Many diversions for irrigation above station.

COOPERATION.--Daily discharge and midnight forebay elevation records furnished by Corps of Engineers. Records reviewed by Geological Survey.

AVERAGE DISCHARGE.--31 years, 182,400 ft^3/s (5,166 m^3/s), 132,100,000 acre-ft/yr (163 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 818,000 ft^3/s (23,200 m^3/s) June 2, 1956, elevation, 277.01 ft (84.433 m), at site 1.2 mi (1.9 km) downstream; maximum daily discharge, 798,000 ft^3/s (22,600 m^3/s) June 2, 1956; minimum daily discharge, 39,500 ft^3/s (1,120 m^3/s) July 10, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 5, 1894, reached an elevation of 284.2 ft (86.62 m), and that of May 31, 1948, reached an elevation of about 280 ft (85.3 m), both at site 1.2 mi (1.9 km) downstream from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 431,000 ft^3/s (12,200 m^3/s) June 9; maximum midnight forebay elevation, 340.0 ft (103.63 m) Jan. 4, May 26; minimum daily discharge, 55,200 ft^3/s (1,560 m^3/s) Oct. 4; minimum midnight forebay elevation, 337.0 ft (102.72 m) July 30.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87700	78100	130000	246000	157000	128000	169000	196000	370000	228000	198000	130000
2	106000	76700	150000	251000	188000	155000	168000	221000	384000	228000	176000	135000
3	129000	99100	149000	221000	191000	168000	156000	234000	377000	227000	177000	114000
4	55200	115000	152000	232000	214000	163000	151000	268000	371000	224000	184000	127000
5	61200	95600	169000	230000	216000	165000	117000	250000	384000	231000	188000	98000
6	84400	124000	158000	221000	189000	172000	156000	248000	378000	240000	185000	81800
7	90100	112000	127000	219000	168000	141000	151000	240000	393000	276000	201000	74000
8	101000	108000	170000	199000	170000	141000	164000	225000	353000	316000	176000	127000
9	107000	99300	165000	214000	186000	139000	160000	212000	431000	293000	142000	124000
10	108000	135000	163000	200000	196000	148000	136000	172000	416000	281000	193000	112000
11	87900	137000	148000	177000	214000	152000	135000	200000	418000	231000	168000	132000
12	59700	143000	154000	199000	189000	148000	123000	223000	390000	231000	175000	115000
13	80400	137000	165000	214000	177000	149000	156000	209000	390000	219000	181000	77700
14	116000	154000	120000	216000	142000	141000	145000	207000	405000	236000	170000	117000
15	104000	120000	157000	225000	134000	118000	147000	218000	366000	225000	200000	108000
16	127000	120000	147000	208000	163000	141000	150000	213000	391000	211000	148000	126000
17	106000	121000	146000	192000	186000	162000	123000	171000	334000	228000	144000	136000
18	80300	124000	170000	172000	169000	157000	111000	188000	342000	214000	161000	120000
19	72900	126000	151000	178000	203000	171000	105000	200000	345000	220000	157000	93800
20	115000	133000	142000	176000	211000	157000	133000	201000	331000	208000	146000	91800
21	97100	152000	110000	191000	223000	136000	157000	222000	358000	221000	137000	108000
22	119000	131000	124000	186000	202000	124000	144000	220000	334000	214000	152000	121000
23	106000	123000	158000	186000	192000	150000	157000	237000	338000	219000	115000	129000
24	112000	144000	155000	189000	193000	159000	168000	224000	360000	210000	159000	119000
25	100000	146000	122000	164000	211000	143000	160000	224000	316000	171000	142000	111000
26	66200	150000	153000	184000	200000	159000	137000	247000	308000	164000	146000	99500
27	109000	105000	226000	207000	178000	160000	162000	295000	295000	207000	146000	65200
28	115000	145000	260000	196000	149000	127000	174000	310000	286000	211000	139000	113000
29	106000	96300	263000	201000	---	132000	177000	312000	266000	194000	129000	104000
30	112000	88500	272000	207000	---	144000	214000	356000	268000	218000	99700	128000
31	104000	---	255000	177000	---	158000	---	354000	---	213000	148000	---
TOTAL	3025100	3638600	5131000	6278000	5211000	4608000	4506000	7297000	10698000	7009000	4983700	3337900
MEAN	97580	121300	165500	202500	186100	148600	150200	235400	356600	226100	160800	111300
MAX	129000	154000	272000	251000	223000	172000	214000	356000	431000	316000	201000	136000
MIN	55200	76700	110000	164000	134000	118000	105000	171000	266000	164000	99700	65200
AC-FT	6000000	7217000	10180000	12450000	10340000	9140000	8938000	14470000	21220000	13900000	9885000	6621000

CAL YR 1980 TOTAL 56359000 MEAN 154000 MAX 330000 MIN 47500 AC-FT 111800000
WTR YR 1981 TOTAL 65723300 MEAN 180100 MAX 431000 MIN 55200 AC-FT 130400000

14020000 UMATILLA RIVER ABOVE MEACHAM CREEK, NEAR GIBBON, OR

LOCATION.--Lat 45°43'11", long 118°19'20", in SE¼SW¼ sec.21, T.3 N., R.36 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on right bank 0.8 mi (1.3 km) downstream from Ryan Creek, 2.2 mi (3.5 km) upstream from Meacham Creek, 2.5 mi (4.0 km) northeast of Gibbon, and at mile 83.1 (133.7 km).

DRAINAGE AREA.--131 mi^2 (339 km^2).

PERIOD OF RECORD.--April 1933 to current year.

REVISED RECORDS.--WSP 1935: 1946-48(M), 1950(M), 1953(M), 1956-59(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,854.81 ft (565.346 m) National Geodetic Vertical Datum of 1929. Prior to June 27, 1939, at site 1 mi (2 km) downstream at datum 43.94 ft (13.393 m) lower.

REMARKS.--Records good. No regulation or diversion above station.

AVERAGE DISCHARGE.--48 years, 225 ft^3/s (6.372 m^3/s), 23.32 in/yr (592 mm/yr), 163,000 acre-ft/yr (201 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft^3/s (168 m^3/s) Jan. 25, 1975, gage height, 9.18 ft (2.798 m), from rating curve extended above 3,500 ft^3/s (99.1 m^3/s); maximum gage height, 9.50 ft (2.896 m) Jan. 29, 1965; minimum discharge, 16 ft^3/s (0.45 m^3/s) Nov. 9, 1965, momentary regulation from unknown source.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft^3/s (39.6 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 26	1100	1,930	54.7	6.19	1.887	Feb. 16	-	*3,710	105	*7.46	2.274

Minimum, 36 ft^3/s (1.02 m^3/s) Aug. 7, 8, Sept. 14-18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	56	128	264	170	297	908	475	170	92	44	40
2	45	57	155	229	160	275	704	401	160	87	43	40
3	45	57	285	200	150	268	560	345	148	84	44	40
4	45	56	285	185	143	261	465	333	140	86	43	40
5	45	56	250	173	135	243	440	309	138	84	41	40
6	44	64	206	163	127	226	410	293	203	86	39	39
7	44	108	175	153	119	219	383	293	178	87	38	39
8	44	120	155	148	110	209	353	305	305	75	38	39
9	44	101	143	138	100	197	365	301	415	67	39	39
10	45	99	135	128	90	194	353	293	379	63	39	39
11	45	94	128	125	100	191	349	275	337	60	41	39
12	48	87	125	118	200	188	349	254	293	58	41	39
13	51	81	123	115	400	185	349	240	257	57	44	39
14	92	76	120	108	900	185	341	264	219	55	45	38
15	140	73	123	103	1600	185	369	357	194	52	45	38
16	94	70	135	101	2600	229	445	357	194	51	49	38
17	79	69	150	101	2000	215	485	333	188	51	55	38
18	70	69	155	101	1500	212	545	313	173	51	55	38
19	66	67	145	97	1550	209	608	297	197	51	56	39
20	63	67	138	96	1100	206	584	305	180	52	60	40
21	60	69	138	94	789	197	560	297	170	51	57	40
22	58	120	297	103	608	219	555	278	160	51	53	41
23	58	118	406	108	510	229	632	261	150	49	52	43
24	57	106	341	155	455	226	950	247	135	48	48	41
25	57	99	796	145	406	278	728	271	128	48	44	44
26	57	96	1680	145	374	817	608	268	120	47	45	44
27	56	92	971	148	341	1180	515	247	110	46	44	57
28	56	106	638	170	321	880	470	226	105	45	41	56
29	56	115	460	197	---	768	450	206	99	45	39	51
30	55	130	357	203	---	710	450	200	96	45	40	47
31	56	---	301	188	---	796	---	185	---	45	40	---
TOTAL	1820	2578	9644	4502	17058	10694	15283	9029	5741	1869	1402	1245
MEAN	58.7	85.9	311	145	609	345	509	291	191	60.3	45.2	41.5
MAX	140	130	1680	264	2600	1180	950	475	415	92	60	57
MIN	44	56	120	94	90	185	341	185	96	45	38	38
CFSM	.45	.66	2.37	1.11	4.65	2.63	3.89	2.22	1.46	.46	.35	.32
IN.	.52	.73	2.74	1.28	4.84	3.04	4.34	2.56	1.63	.53	.40	.35
AC-FT	3610	5110	19130	8930	33830	21210	30310	17910	11390	3710	2780	2470

CAL YR 1980 TOTAL 72367 MEAN 198 MAX 1680 MIN 43 CFSM 1.51 IN 20.55 AC-FT 143500
WTR YR 1981 TOTAL 80865 MEAN 222 MAX 2600 MIN 38 CFSM 1.70 IN 22.96 AC-FT 160400

NOTE.--No gage-height record Feb. 3-20.

14020300 MEACHAM CREEK AT GIBBON, OR

LOCATION.--Lat 45°41'20", long 118°21'20", in SE¼SE¼ sec.31, T.3. N., R.36 E., Umatilla County, Hydrologic Unit 17070103, on left bank 250 ft (76 m) downstream from Union Pacific railroad bridge, 0.9 mi (1.4 km) southeast of Gibbon, and at mile 1.4 (2.3 km).

DRAINAGE AREA.--176 mi² (456 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,803.05 ft (549.570 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those February 16 to April 15, which are poor. No regulation or diversion above station.

AVERAGE DISCHARGE.--6 years, 186 ft³/s (5.268 m³/s), 14.35 in/yr (364 mm/yr), 134,800 acre-ft (166 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,120 ft³/s (117 m³/s) Feb. 16, 1981, gage height, 6.10 ft (1.859 m), from floodmark; maximum gage height, 6.37 ft (1.942 m), from floodmark, Dec. 14, 1977; minimum discharge, 7.1 ft³/s (0.20 m³/s) Aug. 11-14, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 25, 1975, reached a stage of 7.21 ft (2.198 m), from floodmark, discharge, about 8,200 ft³/s (230 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,600 ft³/s (45.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 26	0130	3,230	91.5	5.76	1.756	Feb. 19	1400	2,670	75.6	5.51	1.679
Feb. 16	1800	*4,120	117	a*6.10	1.859	Mar. 27	1200	1,820	51.5	5.03	1.533

Minimum recorded, 9.3 ft³/s (0.26 m³/s) Sept. 18, but may have been less during period of no gage-height record Oct. 1-20.

a From floodmark.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	15	67	193	98	276	817	364	207	88	18	11
2	12	15	110	173	95	258	700	313	183	78	17	11
3	11	15	154	156	94	241	574	279	148	66	18	11
4	10	15	201	141	91	239	449	270	116	56	17	11
5	10	15	211	131	86	228	421	258	120	48	16	11
6	10	16	175	120	84	215	382	247	205	56	16	11
7	10	21	137	111	78	207	347	255	218	75	15	11
8	10	23	112	103	74	200	320	300	356	68	15	11
9	10	28	99	97	73	195	310	316	817	51	14	11
10	10	29	93	89	65	191	297	310	774	44	14	11
11	10	29	88	84	63	185	297	291	616	42	13	11
12	12	28	84	78	79	183	300	273	496	40	13	11
13	15	28	80	74	111	181	294	252	416	38	13	10
14	30	27	77	69	356	179	291	258	356	34	13	10
15	90	26	77	65	560	175	391	313	307	32	12	10
16	60	25	80	61	2130	189	509	323	297	29	12	10
17	45	24	91	59	1740	185	515	313	313	28	12	9.7
18	33	23	100	57	1280	181	509	303	291	27	12	9.7
19	28	23	100	56	2500	177	528	310	294	25	12	10
20	24	22	98	53	1690	173	484	343	279	25	12	11
21	21	24	102	54	889	167	443	432	264	25	12	10
22	20	39	279	53	588	181	411	421	247	25	12	11
23	19	51	444	57	466	191	449	377	228	23	12	11
24	17	52	456	79	416	191	676	339	203	23	12	11
25	17	51	1850	79	364	218	554	364	183	22	12	11
26	17	49	2080	81	331	646	472	377	165	21	12	11
27	16	48	835	82	307	1630	416	347	150	20	11	15
28	16	50	472	86	291	1190	373	313	133	20	11	15
29	15	55	327	94	---	854	364	282	115	19	11	14
30	15	63	267	101	---	707	352	261	100	19	11	13
31	15	---	225	103	---	700	---	239	---	18	11	---
TOTAL	641	929	9571	2839	14999	10733	13245	9643	8597	1185	411	334.4
MEAN	20.7	31.0	309	91.6	536	346	442	311	287	38.2	13.3	11.1
MAX	90	63	2080	193	2500	1630	817	432	817	88	18	15
MIN	10	15	67	53	63	167	291	239	100	18	11	9.7
CFSM	.12	.18	1.76	.52	3.05	1.97	2.51	1.77	1.63	.22	.08	.06
IN.	.14	.20	2.02	.60	3.17	2.27	2.80	2.04	1.82	.25	.09	.07
AC-FT	1270	1840	18980	5630	29750	21290	26270	19130	17050	2350	815	663

CAL YR 1980 TOTAL 65868.0 MEAN 180 MAX 2080 MIN 10 CFSM 1.02 IN 13.92 AC-FT 130600
WTR YR 1981 TOTAL 73127.4 MEAN 200 MAX 2500 MIN 9.7 CFSM 1.14 IN 15.46 AC-FT 145000

14020300 MEACHAM CREEK AT GIBBON, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
OCT 21...	1100	22	76	7.6	10.5	29	7.1	2.8	4.0	2.2	39	<1.0

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)
OCT 21...	2.0	.1	<.10	.030	.30	.020	1.80	1.9	.050	.010	3.4

DATE	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	TUR-BID-ITY (NTU)	ARSENIC DIS-SOLVED (UG/L AS AS)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)
OCT 21...	.1	32	73	74	4.2	.70	<1	4	40	<100	<1

DATE	BORON, DIS-SOLVED (UG/L AS B)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CADMIUM DIS-SOLVED (UG/L AS CD)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 21...	40	20	<1	<1	<10	<10	<3	<1	<10	26	30

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)
OCT 21...	130	<10	5	1	10	<.1	.1	<10	<1	5	<1

DATE	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI)	LITHIUM DIS-SOLVED (UG/L AS LI)
OCT 21...	<1	<1	1	37	4.0	11	50	20	40	<10	<4

14021000 UMATILLA RIVER AT PENDLETON, OR

LOCATION.--Lat 45°40'20", long 118°47'30", in NW¼NE¼ sec.10, T.2 N., R.32 E., Umatilla County, Hydrologic Unit 17070103, on wingwall 0.3 mi (0.5 km) downstream from Main Street bridge at Pendleton, 1.5 mi (2.4 km) downstream from Wildhorse Creek, 2.8 mi (4.5 km) upstream from McKay Creek, and at mile 55.2 (88.8 km).

DRAINAGE AREA.--637 mi² (1,650 km²).

PERIOD OF RECORD.--February 1891 to July 1892, May 1903 to June 1905 (gage heights and discharge measurements only June to December 1904), October 1934 to current year. Monthly discharge only February 1891 to July 1892, published in WSP 1318.

REVISED RECORDS.--WSP 1398: 1904, 1937.

GAGE.--Water-stage recorder. Datum of gage is 1,054.3 ft (321.35 m) National Geodetic Vertical Datum of 1929 (levels by Oregon Department of Transportation). Apr. 24 to Aug. 26, 1959, nonrecording gage and Aug. 27, 1959, to Feb. 4, 1965, water-stage recorder at 8th Street Bridge 0.7 mi (1.1 km) upstream at datum of 1,067.01 ft (325.225 m) National Geodetic Vertical Datum of 1929. Feb. 5 to Nov. 18, 1965, nonrecording gage at Main Street Bridge 1,600 ft (2,574.4 m) upstream at different datum. Nov. 19, 1965, to Sept. 30, 1969, water-stage recorder at 8th Street Bridge 0.7 mi (1.1 km) upstream at datum of 1,067.60 ft (325.404 m) National Geodetic Vertical Datum of 1929 Nov. 19, 1965, to Mar. 28, 1967, and at datum of 1,064.02 ft (324.313 m) National Geodetic Vertical Datum of 1929 Mar. 29, 1967, to Sept. 30, 1969. See WSP 1738 for history of changes prior to Apr. 24, 1959.

REMARKS.--Records good. No regulation. Many diversions for irrigation above station.

AVERAGE DISCHARGE.--47 years (water years 1935-81), 496 ft³/s (14.05 m³/s), 359,400 acre-ft/yr (443 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,500 ft³/s (439 m³/s) Jan. 30, 1965, gage height, 9.40 ft (2.865 m), datum then in use; minimum, 10 ft³/s (0.28 m³/s) July 13-16, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 17,000 ft³/s (481 m³/s) Dec. 14, 1882 (date and discharge from data furnished by Corps of Engineers). Flood of May 30, 31, 1906, reached a stage of 11.0 ft (3.35 m), 1934-58 site and datum, but before channel was improved, discharge, 15,500 ft³/s (439 m³/s), estimated by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s (99.1 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 26	0830	5,740	163	7.55	2.301	Feb. 19	1530	5,040	143	7.12	2.170
Feb. 16	2230	*6,310	179	*7.89	2.405						

Minimum, 29 ft³/s (0.82 m³/s) Sept. 12.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	77	222	641	364	672	1730	841	403	166	58	44
2	58	74	272	571	337	656	1050	753	374	162	59	44
3	59	74	598	506	328	626	1050	656	328	153	56	44
4	59	74	657	435	319	626	1020	641	294	141	56	39
5	58	77	641	384	302	612	976	612	279	132	53	38
6	56	84	558	355	279	557	878	557	446	136	53	44
7	54	102	457	319	258	531	805	544	446	157	50	39
8	54	175	400	302	244	518	770	626	612	153	44	39
9	56	166	350	272	238	481	770	641	1180	132	48	39
10	58	162	330	258	225	458	753	641	1200	118	47	39
11	63	157	310	244	213	446	736	612	1020	112	44	39
12	63	149	300	231	231	435	753	557	841	109	39	38
13	72	136	286	219	391	424	753	506	736	99	39	35
14	115	132	272	207	1350	403	736	506	656	96	44	36
15	191	128	265	196	1490	393	753	687	571	94	42	38
16	175	122	272	186	4430	446	860	770	506	89	42	37
17	136	118	302	181	3930	458	897	753	544	86	41	36
18	109	115	319	181	2370	446	936	720	469	84	38	37
19	99	115	328	172	4320	435	1020	687	506	82	36	38
20	91	109	310	172	2990	424	997	687	469	74	39	38
21	86	109	310	172	1450	403	917	787	435	70	44	44
22	84	132	571	172	1030	424	860	787	403	68	41	44
23	82	196	899	167	1030	469	917	736	364	68	44	45
24	79	196	899	238	936	469	1200	672	310	67	41	45
25	79	180	1840	258	860	518	1200	720	279	67	39	47
26	79	170	4460	251	770	1220	1070	753	250	65	44	47
27	79	166	1890	258	736	3050	917	672	229	63	42	70
28	77	175	1050	279	720	3120	841	641	217	61	42	74
29	77	191	936	328	---	1200	787	557	206	58	41	72
30	77	206	770	384	---	1030	787	506	180	63	38	63
31	74	---	687	374	---	1150	---	469	---	59	42	---
TOTAL	2555	4067	21761	8913	32141	23100	27739	20297	14753	3084	1386	1332
MEAN	82.4	136	702	288	1148	745	925	655	492	99.5	44.7	44.4
MAX	191	206	4460	641	4430	3120	1730	841	1200	166	59	74
MIN	54	74	222	167	213	393	736	469	180	58	36	35
AC-FT	5070	8070	43160	17680	63750	45820	55020	40260	29260	6120	2750	2640

CAL YR 1980 TOTAL 155535 MEAN 425 MAX 4460 MIN 42 AC-FT 308500
WTR YR 1981 TOTAL 161128 MEAN 441 MAX 4460 MIN 35 AC-FT 319600

14022200 NORTH FORK MCKAY CREEK NEAR PILOT ROCK, OR

LOCATION.--Lat 45°30'24", long 118°36'57", in NE¼SE¼ sec.1, T.1 S., R.33 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on left bank 10 mi (16 km) northeast of Pilot Rock and at mile 0.5 (0.8 km).

DRAINAGE AREA.--48.6 mi^2 (125.9 km^2).

PERIOD OF RECORD.--May 1973 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,870 ft (570 m), from topographic map.

REMARKS.--Records good. No regulation or diversion above station.

AVERAGE DISCHARGE.--8 years, 43.3 ft^3/s (1.226 m^3/s), 31,370 acre-ft/yr (38.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,980 ft^3/s (56.1 m^3/s) Jan. 25, 1975, gage height, 8.48 ft (2.585 m), from floodmark, from rating curve extended above 150 ft^3/s (4.25 m^3/s) on basis of slope-area measurement of peak flow; minimum, 0.30 ft^3/s (0.008 m^3/s) July 15, 1975 (result of temporary construction upstream).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 290 ft^3/s (8.21 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 16	1430	*1,110	31.4	a*5.91	1.801	Mar. 27	0300	893	25.3	5.19	1.582
Feb. 18	2400	507	14.4	3.82	1.164	Mar. 31	2000	486	13.8	3.74	1.140

Minimum, 0.37 ft^3/s (0.010 m^3/s) Aug. 5.

a From floodmark.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	2.9	14	47	49	74	354	35	34	8.1	1.6	.92
2	1.4	2.9	21	42	47	65	261	31	31	7.5	1.5	.86
3	1.4	2.9	36	38	45	58	199	27	25	6.9	1.4	.92
4	1.3	2.9	41	33	41	65	147	31	22	6.3	1.4	.86
5	1.3	2.9	40	30	37	68	125	31	24	5.8	1.1	.86
6	1.3	3.7	38	27	33	65	107	30	50	7.5	1.1	.81
7	1.3	6.9	33	24	29	63	99	37	41	8.7	1.1	.81
8	1.3	8.8	27	22	27	63	90	44	94	6.6	.99	.81
9	1.3	8.0	23	21	26	62	88	41	127	5.6	1.1	.75
10	1.3	9.2	25	18	23	59	85	39	112	5.1	1.2	.75
11	1.4	9.2	26	16	19	55	77	39	92	4.6	1.2	.75
12	1.7	8.8	30	15	26	52	85	35	77	4.4	1.1	.75
13	2.0	8.4	28	14	94	48	85	32	63	4.0	1.1	.75
14	4.9	8.0	25	13	207	44	81	50	51	3.8	1.2	.64
15	25	7.6	27	11	268	39	75	99	44	3.4	1.2	.70
16	16	7.3	33	11	697	49	68	109	44	3.2	1.1	.70
17	11	7.3	33	10	368	44	59	92	40	3.0	1.1	.64
18	8.4	7.3	30	10	344	41	52	85	36	2.9	1.1	.64
19	7.3	7.6	25	10	430	39	46	83	36	2.5	1.1	.81
20	6.0	7.6	23	9.6	290	38	41	97	31	2.4	1.1	.86
21	5.3	7.6	26	11	206	35	48	109	27	2.2	1.1	.86
22	4.6	8.8	37	10	154	46	42	97	23	2.2	1.1	.92
23	4.3	9.2	38	12	125	51	40	80	20	2.2	.99	.99
24	4.0	8.8	87	28	107	49	57	68	18	2.1	.92	.99
25	3.7	8.8	193	28	107	74	50	95	16	2.1	.99	1.1
26	3.4	8.8	172	29	105	419	49	99	14	2.0	.99	1.1
27	3.4	8.8	119	31	94	664	46	85	12	1.9	.99	1.5
28	3.4	11	90	36	85	354	44	68	11	1.8	.92	1.5
29	3.2	13	73	43	---	302	39	54	9.7	1.8	.99	1.4
30	3.2	14	62	48	---	261	36	49	9.0	1.7	.92	1.3
31	2.9	---	54	49	---	329	---	39	---	1.6	.92	---
TOTAL	138.4	229.0	1529	746.6	4083	3675	2675	1910	1233.7	123.9	34.62	27.25
MEAN	4.46	7.63	49.3	24.1	146	119	89.2	61.6	41.1	4.00	1.12	.91
MAX	25	14	193	49	697	664	354	109	127	8.7	1.6	1.5
MIN	1.3	2.9	14	9.6	19	35	36	27	9.0	1.6	.92	.64
AC-FT	275	454	3030	1480	8100	7290	5310	3790	2450	246	69	54

CAL YR 1980 TOTAL 14375.10 MEAN 39.3 MAX 334 MIN 1.0 AC-FT 28510
WTR YR 1981 TOTAL 16405.47 MEAN 44.9 MAX 697 MIN .64 AC-FT 32540

14022500 MCKAY CREEK NEAR PILOT ROCK, OR

LOCATION.--Lat 45°32'57", long 118°46'24", in NW¼SE¼ sec.23, T.1 N., R.32 E., Umatilla County, Hydrologic Unit 17070103, on left bank 500 ft (152 m) upstream from county road bridge, 5.5 mi (8.8 km) northeast of Pilot Rock, and at mile 8.2 (13.2 km).

DRAINAGE AREA.--180 mi² (466 km²).

PERIOD OF RECORD.--May to August 1921, October 1926 to June 1928, December 1928 to July 1929, October 1929 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1398: 1928-29, 1933, 1940.

GAGE.--Water-stage recorder. Datum of gage is 1,343.60 ft (409.529 m) National Geodetic Vertical Datum of 1929. See WSP 1318 or 1738 for history of changes prior to Apr. 9, 1941. Apr. 9, 1941, to July 24, 1963, at site 1,000 ft (305 m) downstream at datum 7.92 ft (2.414 m) lower.

REMARKS.--Records good. No regulation. Many small diversions for irrigation above station.

AVERAGE DISCHARGE.--53 years (water years 1927, 1930-81), 99.7 ft³/s (2.824 m³/s), 72,230 acre-ft/yr (89.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,400 ft³/s (210 m³/s) Jan. 30, 1965, gage height, 8.40 ft (2.560 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 840 ft³/s (23.8 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 16	0330	*1,500	42.5	a*6.08	1.853	Mar. 27	b0600	1,490	42.2	c6.07	1.850

Minimum recorded, 0.69 ft³/s (0.020 m³/s) Sept. 9, 13-17.

a Maximum recorded.
b About.
c From graph based on gage readings.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	11	32	125	92	264	586	102	111	34	2.5	.98
2	3.4	11	38	108	89	240	471	96	100	32	2.5	.98
3	3.4	7.8	76	95	85	213	517	87	85	29	2.2	.98
4	3.4	5.0	97	85	79	228	355	94	76	26	2.2	.98
5	3.4	5.0	107	75	74	236	296	94	74	23	2.2	.98
6	3.4	5.4	106	69	68	224	272	94	164	28	1.9	.98
7	3.4	6.6	93	63	61	217	232	104	147	34	1.9	.98
8	3.0	8.3	84	57	58	217	220	131	288	29	1.7	.98
9	3.4	9.5	75	53	55	217	220	126	497	23	1.7	.88
10	3.4	11	70	49	48	213	210	121	447	18	1.5	.88
11	3.8	11	69	45	45	203	196	116	365	17	1.3	.88
12	4.2	11	77	42	50	192	196	109	300	17	1.3	.88
13	4.6	11	80	39	118	179	192	98	256	15	2.5	1.3
14	5.0	11	73	37	334	167	185	109	199	15	1.7	.78
15	27	11	73	34	275	155	179	179	164	14	1.3	.78
16	35	9.4	92	32	1240	167	176	196	164	13	1.3	.78
17	26	8.8	99	31	800	158	173	179	173	12	1.2	1.7
18	21	8.3	91	30	640	150	164	170	150	10	1.1	1.6
19	18	8.7	80	30	840	147	155	176	142	9.4	1.2	1.8
20	17	9.4	72	29	688	139	147	213	128	7.4	1.1	2.1
21	14	16	73	29	517	130	152	292	111	7.0	1.2	2.2
22	14	24	104	28	423	160	144	268	100	6.5	1.2	2.5
23	13	25	113	29	355	173	133	220	87	6.0	1.1	2.8
24	12	25	160	45	325	167	173	185	76	5.3	1.1	2.8
25	12	23	436	50	325	167	155	260	67	5.3	1.1	3.9
26	12	23	376	51	325	746	150	300	57	4.9	1.1	4.6
27	11	22	274	56	300	1410	144	272	52	4.6	1.1	7.0
28	11	25	211	60	284	899	133	220	48	4.2	1.1	7.0
29	11	27	175	71	---	640	118	170	43	3.9	.98	7.4
30	11	30	156	84	---	572	100	142	36	2.8	.98	6.5
31	11	---	147	89	---	537	---	131	---	2.8	.98	---
TOTAL	327.2	420.2	3809	1720	8593	9527	6544	5054	4708	459.1	46.24	68.90
MEAN	10.6	14.0	123	55.5	307	307	218	163	157	14.8	1.49	2.30
MAX	35	30	436	125	1240	1410	586	300	497	34	2.5	7.4
MIN	3.0	5.0	32	28	45	130	100	87	36	2.8	.98	.78
AC-FT	649	833	7560	3410	17040	18900	12980	10020	9340	911	92	137

CAL YR 1980 TOTAL 41877.10 MEAN 114 MAX 950 MIN 1.3 AC-FT 83060
WTR YR 1981 TOTAL 41276.64 MEAN 113 MAX 1410 MIN .78 AC-FT 81870

14023000 MCKAY RESERVOIR NEAR PENDLETON, OR

LOCATION.--Lat 45°36'28", long 118°47'30", in SE¼ sec.34, T.2 N., R.32 E., Umatilla County, Hydrologic Unit 17070103, on Bureau of Reclamation land, near right end of McKay Dam on McKay Creek, 4.0 mi (6.4 km) south of Pendleton, and at mile 4.9 (7.9 km).

DRAINAGE AREA.--186 mi^2 (482 km^2).

PERIOD OF RECORD.--December 1927 to current year.

REVISED RECORDS.--WSP 1154: Drainage area. WDR OR-79-1: 1978.

GAGE.--Water-stage recorder. Datum of gage is 0.16 ft (0.49 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 6, 1973, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by gravel-fill dam with concrete facing, completed in 1926; storage began in 1927. Usable capacity, 73,830 acre-ft (91.9 hm^3), between gage heights 1,182.0 ft (360.27 m), floor of trashrack structure, and 1,322.0 ft (402.95 m) top of spillway gates. Dead storage, about 6 acre-ft (7,400 m^3) included in records. Water is used for irrigation of land along McKay Creek and Umatilla River.

COOPERATION.--Capacity tables furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 73,840 acre-ft (91.0 hm^3) June 9, 1950, gage height, 1,322.0 ft (402.95 m); no usable contents Sept. 7, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 68,680 acre-ft (84.7 hm^3) Apr. 14, 15, gage height, 1,317.82 ft (401.672 m); minimum, 17,160 acre-ft (21.2 hm^3) Oct. 14, gage height, 1,253.10 ft (381.945 m).

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,253.30	17,260	-
Oct. 31	1,254.25	17,760	+500
Nov. 30	1,256.14	18,750	+990
Dec. 31	1,268.23	25,740	+6,990
CAL YR 1980	-	-	+6,190
Jan. 31	1,273.39	29,020	+3,280
Feb. 28	1,296.00	46,220	+17,200
Mar. 31	1,314.42	64,740	+18,520
Apr. 30	1,317.11	67,830	+3,090
May 31	1,317.11	67,830	0
June 30	1,316.28	66,860	-970
July 31	1,301.18	50,930	-15,930
Aug. 31	1,276.83	31,340	-19,590
Sept.30	1,253.50	17,360	-13,980
WTR YR 1981	-	-	+100

14023500 MCKAY CREEK NEAR PENDLETON, OR

LOCATION.--Lat 45°36'34", long 118°47'55", in SE¼NW¼ sec.34, T.2 N., R.32 E., Umatilla County, Hydrologic Unit 17070103, on right bank 35 ft (11 m) upstream from diversion dam, 0.2 mi (0.3 km) downstream from McKay Dam, 4.5 mi (7.2 km) south of Pendleton, and at mile 4.7 (7.6 km).

DRAINAGE AREA.--186 mi^2 (482 km^2).

PERIOD OF RECORD.--November 1918 to May 1919, October 1919 to September 1923, October 1924 to September 1927, November 1927 to September 1943, April 1944 to October 1947 (irrigation seasons only), March 1948 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1154: Drainage area. WSP 1398: 1923.

GAGE.--Water-stage recorder. Concrete control since Mar. 23, 1928. Datum of gage is 1,163.71 ft (354.699 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). See WSP 1318 or 1738 for history of changes prior to Nov. 16, 1948.

REMARKS.--Records good. Flow completely regulated since 1927 by McKay Reservoir (see station 14023000). Many diversions for irrigation above station. Since 1932, records have excluded flow in Elder ditch which, since 1953, has diverted not over 1.5 ft^3/s (0.042 m^3/s) at station for irrigation during season and up to 1 ft^3/s (0.03 m^3/s) seepage from reservoir, for stock water at other times.

AVERAGE DISCHARGE.--44 years (water years 1933-43, 1949-81), 94.3 ft^3/s (2.671 m^3/s), 68,320 acre-ft/yr (84.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 3,250 ft^3/s (92.0 m^3/s) Feb. 10, 1921, gage height, 4.4 ft (1.34 m), site and datum then in use, from rating curve extended above 1,200 ft^3/s (34.0 m^3/s); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 620 ft^3/s (17.6 m^3/s) June 9, gage height, 1.93 ft (0.588 m); no flow Oct. 2 to Mar. 31, Apr. 12, 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	.00	.00	.00	.00	.00	67	98	121	236	303	252
2	.00	.00	.00	.00	.00	.00	171	93	106	236	302	278
3	.00	.00	.00	.00	.00	.00	277	83	91	235	300	278
4	.00	.00	.00	.00	.00	.00	381	72	81	235	306	277
5	.00	.00	.00	.00	.00	.00	407	89	63	235	311	272
6	.00	.00	.00	.00	.00	.00	409	89	208	235	308	270
7	.00	.00	.00	.00	.00	.00	218	106	146	220	320	270
8	.00	.00	.00	.00	.00	.00	143	146	320	193	337	269
9	.00	.00	.00	.00	.00	.00	143	149	564	219	342	266
10	.00	.00	.00	.00	.00	.00	127	120	567	232	341	266
11	.00	.00	.00	.00	.00	.00	48	107	408	247	341	260
12	.00	.00	.00	.00	.00	.00	.00	109	262	253	347	255
13	.00	.00	.00	.00	.00	.00	.00	100	289	253	366	253
14	.00	.00	.00	.00	.00	.00	99	109	227	278	353	240
15	.00	.00	.00	.00	.00	.00	353	218	166	302	343	211
16	.00	.00	.00	.00	.00	.00	376	220	196	314	341	197
17	.00	.00	.00	.00	.00	.00	205	195	180	313	340	196
18	.00	.00	.00	.00	.00	.00	185	165	118	312	335	210
19	.00	.00	.00	.00	.00	.00	110	206	161	312	335	216
20	.00	.00	.00	.00	.00	.00	143	223	175	265	333	214
21	.00	.00	.00	.00	.00	.00	214	335	143	314	322	229
22	.00	.00	.00	.00	.00	.00	154	276	67	313	314	239
23	.00	.00	.00	.00	.00	.00	133	209	38	313	314	219
24	.00	.00	.00	.00	.00	.00	178	174	38	309	303	203
25	.00	.00	.00	.00	.00	.00	171	327	97	307	279	201
26	.00	.00	.00	.00	.00	.00	163	362	130	307	263	200
27	.00	.00	.00	.00	.00	.00	156	211	130	306	256	200
28	.00	.00	.00	.00	.00	.00	132	188	130	306	256	162
29	.00	.00	.00	.00	---	.00	119	227	145	306	255	102
30	.00	.00	.00	.00	---	.00	97	159	219	305	254	55
31	.00	---	.00	.00	---	.00	---	131	---	305	253	---
TOTAL	55.00	.00	.00	.00	.00	.00	5379.00	5296	5586	8516	9673	6760
MEAN	1.77	.000	.000	.000	.000	.000	179	171	186	275	312	225
MAX	55	.00	.00	.00	.00	.00	409	362	567	314	366	278
MIN	.00	.00	.00	.00	.00	.00	.00	72	38	193	253	55
AC-FT	109	.00	.00	.00	.00	.00	10670	10500	11080	16890	19190	13410

CAL YR 1980 TOTAL 34166.00 MEAN 93.3 MAX 517 MIN .00 AC-FT 67770
WTR YR 1981 TOTAL 41265.00 MEAN 113 MAX 567 MIN .00 AC-FT 81850

14026000 UMATILLA RIVER AT YOAKUM, OR

LOCATION.--Lat 45°40'40", long 119°02'00", in SW¼SW¼ sec.2, T.2 N., R.30 E., Umatilla County, Hydrologic Unit 17070103, at left bank on downstream side of highway bridge, 0.5 mi (0.8 km) northeast of Yoakum, 2.5 mi (4.0 km) downstream from abandoned Furnish Reservoir, 12.0 mi (19.3 km) downstream from Birch Creek, and at mile 37.7 (60.7 km).

DRAINAGE AREA.--1,280 mi² (3,320 km²), approximately.

PERIOD OF RECORD.--May 1903 to current year. Published as "above Furnish Reservoir, near Yoakum" October 1916 to September 1934.

REVISED RECORDS.--WSP 794: 1906(M). WSP 1398: 1904-6, 1908-9, 1922-23, 1926, 1936.

GAGE.--Water-stage recorder. Datum of gage is 768.21 ft (234.150 m) National Geodetic Vertical Datum of 1929. See WSP 1318 or 1738 for history of changes prior to Oct. 21, 1948.

REMARKS.--Records good October to April, excellent May to September. Slight regulation by Furnish Reservoir 1910-34, capacity, 3,900 acre-ft (4.81 hm³) prior to filling with silt. Flow regulated to some extent since 1927 by McKay Reservoir (see station 14023000). Many diversions for irrigation above station.

AVERAGE DISCHARGE.--78 years, 671 ft³/s (19.00 m³/s), 486,100 acre-ft/yr (599 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft³/s (566 m³/s) May 30, 1906, gage height, about 15.0 ft (4.57 m), site and datum then in use, from floodmarks, from rating curve extended above 6,600 ft³/s (187 m³/s); minimum, 12 ft³/s (0.34 m³/s) Aug. 10-12, 1908, Aug. 4, 1910.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,600 ft³/s (102 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 26	1230	6,760	191	7.48	2.280	Feb. 20	0030	6,270	178	7.22	2.201
Feb. 17	0230	*8,880	251	*8.49	2.588	Mar. 27	1030	5,460	155	6.79	2.070

Minimum, 53 ft³/s (1.50 m³/s) Oct. 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158	100	273	869	445	947	3110	1180	611	377	336	271
2	72	98	292	756	415	860	2660	1040	535	368	336	278
3	69	98	559	665	391	794	2160	878	487	372	334	301
4	67	98	665	585	373	783	1950	804	440	352	337	299
5	62	100	694	523	355	848	1740	796	408	343	340	293
6	61	109	631	475	337	806	1590	748	729	361	339	293
7	58	125	534	440	321	756	1440	724	714	379	343	293
8	57	170	450	405	300	715	1290	844	1010	342	354	292
9	55	179	390	377	289	682	1250	869	2100	325	368	294
10	57	173	360	350	269	650	1240	844	2170	335	369	293
11	58	170	340	329	247	622	1150	772	1850	331	361	293
12	64	170	325	312	273	597	1090	724	1450	344	358	289
13	68	162	315	296	386	575	1090	651	1300	339	376	288
14	103	159	310	285	1710	559	1070	630	1080	343	374	283
15	197	159	310	273	2540	543	1360	950	867	359	360	257
16	227	153	312	255	4790	538	1650	1100	772	386	358	235
17	169	148	332	244	6710	613	1590	1080	870	371	353	231
18	140	145	359	244	3700	578	1620	990	673	369	350	236
19	126	148	361	237	5830	556	1610	1010	714	366	350	247
20	117	145	348	230	4990	540	1610	1000	699	322	351	248
21	110	142	346	230	3050	521	1590	1270	650	355	347	258
22	106	153	527	226	2160	531	1440	1240	540	352	335	282
23	102	213	1030	223	1730	612	1450	1110	451	349	333	277
24	100	223	961	289	1510	608	2020	960	407	348	329	251
25	100	217	2020	333	1450	604	1870	1140	382	345	299	249
26	98	210	5520	325	1270	1580	1590	1330	395	344	283	252
27	98	207	3330	333	1150	4900	1430	1090	365	343	273	287
28	96	213	2160	342	1040	3980	1240	923	346	340	273	259
29	100	233	1600	395	---	2840	1170	887	330	338	273	205
30	100	255	1280	475	---	2500	1090	780	360	339	273	154
31	100	---	1050	469	---	2140	---	693	---	339	272	---
TOTAL	3095	4875	27984	11790	48031	34378	47160	29057	23705	10876	10337	7988
MEAN	99.8	163	903	380	1715	1109	1572	937	790	351	333	266
MAX	227	255	5520	869	6710	4900	3110	1330	2170	386	376	301
MIN	55	98	273	223	247	521	1070	630	330	322	272	154
AC-FT	6140	9670	55510	23390	95270	68190	93540	57630	47020	21570	20500	15840

CAL YR 1980 TOTAL 227675 MEAN 622 MAX 5520 MIN 55 AC-FT 451600
WTR YR 1981 TOTAL 259276 MEAN 710 MAX 6710 MIN 55 AC-FT 514300

14032000 BUTTER CREEK NEAR PINE CITY, OR

LOCATION (REVISED).--Lat 45°32'48", long 119°18'14", in SE¼SW¼ sec.22, T.1 N., R.28 E., Morrow County, Hydrologic Unit 17070103, on right bank 0.3 mi (0.5 km) downstream from Mattlock Canyon, 6.0 mi (9.7 km) southeast of Pine City, 15 mi (24 km) southwest of Echo, and at mile 28.4 (45.7 km).

DRAINAGE AREA.--291 mi^2 (754 km^2).

PERIOD OF RECORD.--April to June 1928, November 1928 to June 1929, October 1929 to September 1930, January 1931 to September 1932, February to June 1933, October 1933 to September 1941, January to June 1942, October 1942 to current year. Prior to October 1945, monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1218: 1950(M).

GAGE.--Water-stage recorder. Altitude of gage is 1,400 ft (427 m) by barometer. Prior to Oct. 1, 1944, at datum 1.1 ft (0.34 m) higher and Oct. 1, 1944, to Sept. 6, 1949, at datum 1.0 ft (0.30 m) higher.

REMARKS.--Records good. No regulation. Several small diversions for irrigation above station. Water is diverted into headwaters of Butter Creek from Fivemile Creek, a tributary of Camas Creek in John Day River basin, for irrigation below station.

AVERAGE DISCHARGE.--49 years (water years 1930, 1932, 1934-41, 1943-81), 25.8 ft^3/s (0.731 m^3/s), 18,690 acre-ft/yr (23.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,800 ft^3/s (108 m^3/s) Feb. 21, 1949, gage height, 12.4 ft (3.78 m), present datum, from floodmark, from rating curve extended above 440 ft^3/s (12.5 m^3/s) on basis of computation of peak flow over dam; no flow at times.

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

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 17	0130	*244	6.91	*3.94	1.201	Mar. 27	1030	235	6.66	3.76	1.146
Feb. 19	0600	235	6.66	3.89	1.186						

Minimum, 2.0 ft^3/s (0.057 m^3/s) Sept. 11-13, 18-20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	7.5	11	28	18	46	131	62	44	13	4.5	2.8
2	4.8	7.2	10	26	15	43	113	61	39	13	4.2	2.4
3	5.1	7.2	12	24	18	41	101	56	35	9.1	4.2	2.4
4	5.1	7.2	18	22	19	39	90	52	34	7.7	4.5	2.5
5	5.1	7.5	24	21	19	39	83	51	34	6.8	5.2	2.7
6	5.1	7.8	20	20	19	36	78	52	51	12	4.7	2.5
7	4.8	9.2	16	19	18	36	73	50	56	15	3.8	2.4
8	4.8	10	13	18	17	35	68	49	76	14	2.9	2.2
9	4.0	10	10	17	18	36	66	46	109	13	2.7	2.2
10	4.0	9.6	12	17	14	35	64	43	124	8.8	2.6	2.2
11	4.4	9.2	15	16	13	35	60	40	126	9.5	2.5	2.2
12	4.8	9.2	17	16	21	34	58	39	103	10	3.1	2.0
13	5.3	8.8	16	15	25	33	57	37	91	9.1	3.3	2.0
14	6.5	8.0	15	14	116	33	56	35	78	11	2.9	2.2
15	8.5	8.2	15	14	95	32	55	39	69	8.4	2.7	2.2
16	8.8	8.2	16	13	114	36	58	40	60	8.4	2.6	2.2
17	8.5	8.0	17	13	175	36	61	37	63	7.0	2.4	2.2
18	7.8	7.8	19	13	128	34	64	37	54	6.8	2.4	2.1
19	7.5	7.5	18	14	209	35	69	44	50	6.5	2.5	2.0
20	7.5	7.8	17	14	161	33	85	42	45	6.5	2.6	2.0
21	7.2	8.6	18	14	113	32	82	44	41	6.8	2.7	2.2
22	6.8	9.4	24	14	93	33	78	41	38	6.5	2.6	2.8
23	6.8	10	30	14	79	39	73	40	35	6.1	2.6	2.9
24	6.8	11	27	16	71	38	90	39	31	5.9	2.7	3.1
25	7.2	11	55	16	64	39	90	54	28	5.4	2.7	3.1
26	7.2	10	64	15	59	74	84	73	25	5.6	2.7	3.4
27	7.2	10	53	15	54	189	85	61	22	5.6	2.8	5.4
28	7.2	11	42	15	49	186	76	55	21	5.4	2.7	5.9
29	7.5	11	35	16	---	147	72	47	20	4.3	2.4	6.5
30	7.5	11	32	19	---	131	67	48	15	4.2	2.4	6.1
31	7.5	---	30	18	---	117	---	51	---	4.2	2.6	---
TOTAL	196.1	268.9	721	526	1814	1750	2287	1465	1617	255.6	95.2	86.8
MEAN	6.33	8.96	23.3	17.0	64.8	56.5	76.2	47.3	53.9	8.25	3.07	2.89
MAX	8.8	11	64	28	209	189	131	73	126	15	5.2	6.5
MIN	4.0	7.2	10	13	13	32	55	35	15	4.2	2.4	2.0
AC-FT	389	533	1430	1040	3600	3470	4540	2910	3210	507	189	172

CAL YR 1980 TOTAL 11917.7 MEAN 32.6 MAX 191 MIN 2.4 AC-FT 23640
WTR YR 1981 TOTAL 11082.6 MEAN 30.4 MAX 209 MIN 2.0 AC-FT 21980

PRINCIPAL DIVERSIONS FROM UMATILLA RIVER BETWEEN YOAKUM AND UMATILLA GAGING STATIONS, OR

The following canals divert water from Umatilla River between Yoakum and Umatilla, in Umatilla County, Hydrologic Unit 17070103:

14027000 FURNISH CANAL NEAR ECHO diverts from right bank of Umatilla River in SW¼SW¼ sec. 31, T.3 N., R.30 E., for irrigation in vicinity of Stanfield. Records available March 1921 to current year (prior to October 1929 and March 1935 to September 1937 irrigation seasons only). Monthly figures only for irrigation seasons 1921-25, published in WSP 1318.

14029000 UMATILLA PROJECT FEED CANAL NEAR ECHO diverts from right bank of Umatilla River in SW¼ sec.22, T.3 N., R.29 E., and delivers water to Cold Springs Reservoir, capacity, 52,380 acre-ft (64.4 hm^3) of Bureau of Reclamation. Records available October 1920 to current year (incomplete 1928, 1943-44).

14030000 ALLEN CANAL AT ECHO diverts from right bank of Western Land Canal, 0.5 mi (0.8 km) downstream from headgate of that canal in SW¼ sec.16, T.3 N., R.29 E., for irrigation west of Echo. Records available May 1921 to current year (irrigation seasons only in most years). Monthly figures only October to December 1923, published in WSP 1318. Published as Western Land & Irrigation Co.'s canal at Echo 1921-39.

14030500 WESTERN LAND CANAL NEAR ECHO diverts from left bank of Umatilla River in NE¼ sec.21, T.3 N., R.29 E., for irrigation west of Echo and Stanfield and during non-irrigation seasons since 1978, ground-water recharge near Ordnance. Gage is 1 mi (2 km) downstream from intake. Records available May 1921 to current year (irrigation seasons only in many years). Published as Western Land & Irrigation Co.'s canal at Echo 1921-39.

14031500 MAXWELL CANAL NEAR HERMISTON diverts from right bank of Umatilla River in SW¼ sec.28, T.4 N., R.28 E., for irrigation near Hermiston; at times it receives water from Cold Springs Reservoir. Records available March 1921 to current year (irrigation seasons only in most years). REVISIONS (WATER YEARS).--WSP 1398: 1921.

14032500 WEST DIVISION MAIN CANAL NEAR UMATILLA diverts from left bank of Umatilla River in SW¼ sec.28, T.5 N., R.28 E., for irrigation near Irrigon and Boardman. Records of monthly figures April 1921 to current year (incomplete October 1925 to March 1927). Published as "Main canal, west division Umatilla project" 1921, 1923. REVISIONS (WATER YEARS).--WSP 1398: 1923.

Water diverted by all of these canals is used for irrigation of lands on both sides of Umatilla River near and below Echo, except that diverted by West Division main canal which is applied to land along Columbia River in vicinity of Irrigon.

Several small canals also divert water between Yoakum and Umatilla, but no records for these were obtained.

DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

MONTH	FURNISH CANAL	UMATILLA PROJECT FEED CANAL	ALLEN CANAL	WESTERN LAND CANAL	MAXWELL CANAL	WEST DIVISION MAIN CANAL
OCTOBER	1,140	0	413	597	1,270	1,970
NOVEMBER	0	0	352	280	0	0
DECEMBER	0	8,380	0	292	0	0
JANUARY	0	12,970	0	955	0	0
FEBRUARY	0	10,220	0	3,520	0	0
MARCH	992	12,520	.6	5,110	0	0
APRIL	3,780	4,920	734	9,490	2,200	6,460
MAY	6,960	11,260	893	10,880	2,850	9,240
JUNE	5,720	496	461	10,260	2,800	6,420
JULY	6,980	0	776	12,620	2,840	7,350
AUGUST	6,920	0	673	11,550	2,680	7,740
SEPTEMBER	4,290	0	578	9,120	2,140	6,790
WTR YR 1981	36,800	60,077	4,880	74,660	16,780	45,980

NOTE.--No gage-height record for months of little or no flow and short periods at other times.

14033500 UMATILLA RIVER NEAR UMATILLA, OR

LOCATION.--Lat 45°54'11", long 119°19'33", in SW¼NW¼ sec.21, T.5 N., R.28 E., Umatilla County, Hydrologic Unit 17070103, on left bank 1.6 mi (2.6 km) downstream from West Division main canal of Umatilla project, 1.2 mi (1.9 km) southeast of Umatilla, and at mile 2.1 (3.4 km).

DRAINAGE AREA.--2,290 mi² (5,930 km²), approximately.

PERIOD OF RECORD.--October 1903 to current year.

REVISED RECORDS.--WSP 794: Drainage area. WSP 1398: 1909, 1911, 1914, 1928, 1935.

GAGE.--Water-stage recorder. Datum of gage is 330.47 ft (100.727 m) National Geodetic Vertical Datum of 1929. Oct. 21, 1903 to Jan. 25, 1931, nonrecording gage.

REMARKS.--Records good. Some regulation since 1927 by McKay Reservoir (see station 14023000). Many diversions above station for irrigation of lands above and below station; Brownell Canal diverts below station. Diversions since 1908 to Cold Springs Reservoir, an off-channel reservoir, capacity, 52,380 acre-ft (64.6 hm³).

AVERAGE DISCHARGE.--54 years (water years 1928-81), 443 ft³/s (12.55 m³/s), 321,000 acre-ft/yr (396 hm³/yr). Water years prior to 1928 not included in computation of average discharge owing to increased regulation and diversion since 1927.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,800 ft³/s (561 m³/s) Jan. 30, 1965, gage height, 10.75 ft (3.277 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,100 ft³/s (87.8 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 26	1930	6,080	172	6.05	1.844	Mar. 27	2300	4,840	137	5.68	1.731
Feb. 17	1430	*8,560	242	*6.75	2.057	Apr. 1	1130	3,500	99.1	5.21	1.588
Feb. 20	0300	6,670	189	6.28	1.914						

Minimum, 1.0 ft³/s (0.028 m³/s) July 7, 8, 10, 13, 14, 17, 18, 19.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	178	324	803	267	762	3190	476	246	1.6	1.2	1.3
2	50	174	336	675	241	694	2950	484	162	1.3	1.2	1.3
3	46	170	318	570	212	630	2390	348	212	1.2	1.2	1.3
4	39	174	534	492	199	578	2060	256	178	1.2	1.2	1.3
5	35	174	612	430	186	612	1820	231	134	1.2	1.5	1.3
6	32	182	587	368	166	534	1730	207	207	1.5	1.2	1.4
7	26	194	509	336	148	492	1520	182	526	1.2	1.2	1.4
8	29	212	484	295	124	468	1170	212	638	16	1.2	1.4
9	22	256	438	278	115	453	1050	256	1670	11	1.2	1.3
10	20	261	438	256	112	416	985	306	2230	1.3	1.2	1.3
11	19	256	423	231	115	395	902	241	2060	1.1	1.3	1.3
12	23	256	388	221	120	374	762	226	1610	1.2	1.4	1.3
13	30	251	342	207	124	355	742	174	1310	1.1	1.3	1.3
14	49	251	330	199	630	342	656	151	1090	1.1	1.3	1.4
15	109	246	289	159	2280	330	782	272	814	1.3	1.6	1.4
16	236	251	246	144	3000	324	1100	534	587	1.2	1.3	17
17	221	241	226	127	6830	381	1090	578	621	1.1	1.3	23
18	186	246	241	118	3750	374	913	509	453	1.1	1.3	13
19	166	241	251	112	4810	348	879	534	445	1.1	1.4	13
20	155	241	251	109	5600	330	925	484	453	1.1	1.4	38
21	144	241	246	109	3420	312	913	694	409	1.1	1.4	39
22	141	231	251	101	2210	295	835	803	312	1.6	1.4	49
23	148	251	703	101	1620	312	752	694	203	1.2	1.5	57
24	166	301	857	96	1310	342	1070	561	137	1.2	1.4	54
25	166	306	1220	141	1220	361	1320	595	61	1.4	1.3	52
26	166	295	4550	134	1050	638	1010	857	33	1.2	1.4	61
27	162	289	3870	137	937	3870	835	722	16	1.2	1.3	96
28	170	278	2320	148	846	4400	675	570	2.4	1.3	1.3	134
29	174	289	1670	162	---	3040	578	476	1.9	1.5	1.3	148
30	182	301	1180	261	---	2600	460	409	1.4	1.2	1.3	134
31	178	---	937	295	---	2230	---	324	---	1.2	1.3	---
TOTAL	3339	7237	25371	7815	41642	27592	36064	13366	16822.7	63.0	40.8	948.0
MEAN	108	241	818	252	1487	890	1202	431	561	2.03	1.32	31.6
MAX	236	306	4550	803	6830	4400	3190	857	2230	16	1.6	148
MIN	19	170	226	96	112	295	460	151	1.4	1.1	1.2	1.3
AC-FT	6620	14350	50320	15500	82600	54730	71530	26510	33370	125	81	1880

CAL YR 1980 TOTAL 165168.1 MEAN 451 MAX 4550 MIN 1.1 AC-FT 327600
WTR YR 1981 TOTAL 180300.5 MEAN 494 MAX 6830 MIN 1.1 AC-FT 357600

14034500 WILLOW CREEK AT HEPPNER, OR

LOCATION.--Lat 45°21'02", long 119°32'56", in SE¼NW¼ sec.35, T.2 S., R.26 E., Morrow County, Hydrologic Unit 17070104, on right bank at Heppner, 100 ft (30 m) upstream from Court Street bridge, 800 ft (244 m) southeast of Morrow County courthouse, 0.3 mi (0.5 km) downstream from Balm Fork and at mile 52.2 (84.0 km).

DRAINAGE AREA.--87 mi^2 (225 km^2), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,952.73 ft (595.192 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. No regulation. Many diversions for irrigation above station. Part of flow of Ditch Creek (John Day River basin) is diverted to Willow Creek above station.

AVERAGE DISCHARGE.--30 years, 18.6 ft^3/s (0.527 m^3/s), 13,480 acre-ft/yr (16.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 812 ft^3/s (23.0 m^3/s) May 10, 1957, gage height, 6.15 ft (1.875 m), from rating curve extended above 230 ft^3/s (6.51 m^3/s); maximum gage height, 6.46 ft (1.969 m) May 25, 1971, backwater from Shobe Canyon; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, about 36,000 ft^3/s (1,020 m^3/s) June 14, 1903, result of slope-area measurement (see WSP 96). Discharge for flood of Feb. 22, 1949, was 1,700 ft^3/s (48.1 m^3/s), result of slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 105 ft^3/s (2.97 m^3/s) June 8, 9, gage height, 2.29 ft (0.698 m), no peak above base of 170 ft^3/s (4.81 m^3/s); no flow Oct. 5, 10, 12.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	2.8	4.7	7.4	7.8	16	56	28	30	11	.60	.35
2	.01	2.8	5.3	7.4	7.8	16	49	25	25	8.9	.35	.35
3	.01	3.4	5.9	7.4	8.6	15	45	22	22	8.6	.35	.35
4	.01	3.4	8.9	7.0	8.2	16	38	21	20	8.6	.60	.35
5	.00	3.1	7.8	6.7	8.6	15	34	21	19	8.6	.60	.35
6	.01	3.4	6.7	6.7	8.6	13	31	19	45	11	.35	.35
7	.01	5.6	5.6	6.7	7.4	14	27	19	45	12	.17	.17
8	.01	5.9	4.0	6.3	8.0	14	25	20	80	10	.17	.10
9	.01	5.0	4.0	6.7	7.0	13	24	18	101	8.9	.35	.10
10	.00	5.3	6.7	5.9	5.5	13	23	17	96	8.6	.17	.17
11	.01	4.7	6.7	5.9	6.5	12	22	15	86	7.8	.17	.17
12	.00	4.7	5.9	5.6	8.0	11	23	14	74	8.2	.17	.17
13	.01	4.0	5.3	5.6	11	11	22	12	63	7.8	.35	.17
14	.01	3.7	5.6	5.3	16	11	22	12	52	7.0	.35	.17
15	.17	4.0	5.9	5.3	18	11	22	16	42	6.3	.17	.06
16	1.3	4.0	6.7	5.6	34	14	24	17	36	5.6	.17	.10
17	1.1	4.0	6.7	5.6	39	12	26	16	34	3.7	.35	.35
18	.84	3.7	6.3	6.3	39	12	27	19	27	2.3	.17	.10
19	.60	3.7	5.9	6.3	55	12	30	28	25	2.8	.17	.10
20	.60	3.7	5.9	6.3	54	12	37	37	22	2.8	.17	.17
21	1.1	4.4	6.3	7.0	43	12	31	41	20	2.1	.17	.17
22	1.1	4.4	8.9	7.0	36	14	29	38	19	1.8	.10	.35
23	1.1	4.7	7.8	6.7	31	16	28	33	17	1.8	.10	.35
24	1.3	4.4	7.8	7.8	28	16	46	31	15	1.8	.17	.35
25	1.6	4.4	10	7.0	25	19	47	69	14	1.6	.17	.17
26	1.8	4.4	9.3	7.0	21	36	43	68	13	1.1	.17	.17
27	2.1	4.4	9.3	7.4	19	78	38	59	12	.84	.35	.60
28	1.8	5.3	8.9	7.8	17	78	35	48	12	.84	.35	.35
29	2.1	5.3	8.6	8.6	---	74	34	38	11	.84	.60	2.6
30	3.4	5.0	8.2	8.9	---	66	31	42	11	1.1	.60	2.6
31	3.4	---	7.8	8.9	---	60	---	36	---	1.1	.35	---
TOTAL	25.52	127.6	213.4	210.1	578.0	732	969	899	1088	165.42	9.08	11.91
MEAN	.82	4.25	6.88	6.78	20.6	23.6	32.3	29.0	36.3	5.34	.29	.40
MAX	3.4	5.9	10	8.9	55	78	56	69	101	12	.60	2.6
MIN	.00	2.8	4.0	5.3	5.5	11	22	12	11	.84	.10	.06
AC-FT	51	253	423	417	1150	1450	1920	1780	2160	328	18	24

CAL YR 1980 TOTAL 6847.93 MEAN 18.7 MAX 105 MIN .00 AC-FT 13580
WTR YR 1981 TOTAL 5029.03 MEAN 13.8 MAX 101 MIN .00 AC-FT 9980

14034800 RHEA CREEK NEAR HEPPNER, OR

LOCATION.--Lat 45°15'41", long 119°37'02", in NE¼SE¼ sec.31, T.3 S., R.26 E., Morrow County, Hydrologic Unit 17070104, on right bank 1.0 mi (1.6 km) downstream from Sanford Canyon, 8 mi (13 km) southwest of Heppner, and at mile 25.4 (40.9 km).

DRAINAGE AREA.--120 mi² (311 km²), approximately.

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

GAGE.--Water-stage recorder. Altitude of gage is 2,320 ft (707 m), from topographic map. Prior to May 28, 1976, at site 0.4 mi (0.6 km) downstream at different datum.

REMARKS.--Records good except those for February, which are fair. No regulation. Many diversions for irrigation above station.

AVERAGE DISCHARGE.--21 years, 18.8 ft³/s (0.532 m³/s), 13,620 acre-ft/yr (16.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,280 ft³/s (36.2 m³/s) June 10, 1969, gage height, 7.05 ft (2.149 m), site and datum then in use, from rating curve extended above 130 ft³/s (3.68 m³/s) on basis of slope-area measurement at gage height 6.72 ft (2.048 m); maximum gage height, 7.41 ft (2.259 m) Dec. 22, 1964, site and datum then in use; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharge above above base of 230 ft³/s (6.51 m³/s) and maximum discharge, 294 ft³/s (8.33 m³/s) Mar. 27, gage height, 3.28 ft (1.000 m); minimum, 0.87 ft³/s (0.025 m³/s) Sept. 10, 11, 15-18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	3.9	4.6	9.2	7.6	16	76	23	35	7.0	2.2	1.8
2	2.0	3.8	6.3	9.0	7.0	15	66	21	29	6.7	2.3	1.6
3	2.0	4.0	9.3	8.7	7.0	15	58	20	24	6.4	2.5	1.7
4	2.3	4.3	11	8.3	7.4	15	49	19	20	6.2	2.5	1.9
5	2.3	4.1	8.8	7.8	7.4	15	45	19	20	5.7	2.1	1.8
6	2.5	4.7	7.3	7.7	7.2	13	41	17	45	7.8	1.9	1.7
7	2.5	8.0	6.8	7.1	7.0	13	36	20	44	9.8	2.0	1.6
8	2.5	7.8	5.2	6.6	6.6	13	34	15	66	7.8	1.9	1.5
9	2.3	6.0	5.4	7.6	6.4	13	32	15	81	6.7	1.9	1.1
10	2.7	5.7	6.0	6.4	5.8	12	29	13	90	6.2	1.9	.99
11	2.9	5.4	6.9	5.5	4.8	11	27	12	87	6.2	1.8	.87
12	3.7	5.2	6.5	5.0	7.0	10	29	11	79	5.9	1.8	.93
13	5.1	4.1	5.5	4.9	9.0	10	26	13	68	5.5	1.4	.99
14	5.8	4.9	6.1	4.9	11	10	24	17	58	5.1	1.2	.99
15	8.9	4.9	6.7	4.9	15	11	22	20	50	4.9	1.5	.93
16	8.4	4.9	7.3	4.8	25	13	20	18	45	4.5	1.6	.87
17	6.1	4.8	8.2	4.8	54	12	18	60	41	4.3	1.7	.87
18	5.1	4.5	7.1	5.0	52	11	17	68	35	3.9	1.5	.93
19	4.7	4.5	6.4	5.2	69	11	22	64	32	3.6	1.2	.99
20	4.7	4.5	6.4	5.4	57	11	24	64	28	3.6	1.1	.99
21	4.4	4.9	8.5	5.6	45	11	22	80	23	3.2	1.3	1.1
22	4.4	5.8	14	5.8	37	18	22	65	20	2.3	1.4	1.1
23	4.4	5.7	9.8	6.2	30	24	23	50	18	2.4	1.5	1.1
24	4.7	5.3	9.6	6.2	26	23	30	40	15	2.8	1.7	1.3
25	5.1	5.0	13	6.7	24	39	27	50	11	2.8	1.8	1.6
26	5.4	5.0	12	6.2	21	142	30	80	11	3.1	2.2	2.5
27	5.1	5.1	11	6.2	19	230	30	70	9.8	2.9	2.0	5.7
28	4.7	6.0	10	6.6	17	150	30	62	7.8	2.9	2.0	5.7
29	4.7	5.9	9.8	7.0	---	115	27	53	7.3	2.9	2.0	3.6
30	4.7	5.7	9.5	7.6	---	91	26	53	7.0	2.9	2.1	3.2
31	4.4	---	9.4	7.8	---	79	---	43	---	2.9	2.0	---
TOTAL	130.3	154.4	254.4	200.7	592.2	1172	962	1175	1106.9	148.9	56.0	51.95
MEAN	4.20	5.15	8.21	6.47	21.2	37.8	32.1	37.9	36.9	4.80	1.81	1.73
MAX	8.9	8.0	14	9.2	69	230	76	80	90	9.8	2.5	5.7
MIN	1.8	3.8	4.6	4.8	4.8	10	17	11	7.0	2.3	1.1	.87
AC-FT	258	306	505	398	1170	2320	1910	2330	2200	295	111	103

CAL YR 1980 TOTAL 7501.05 MEAN 20.5 MAX 158 MIN .95 AC-FT 14880
WTR YR 1981 TOTAL 6004.75 MEAN 16.5 MAX 230 MIN .87 AC-FT 11910

14037500 STRAWBERRY CREEK ABOVE SLIDE CREEK, NEAR PRAIRIE CITY, OR

LOCATION.--Lat 44°20'30", long 118°39'20", in SE¼NW¼ sec.20, T.14 S., R.34 E., Grant County, Hydrologic Unit 17070201, on left bank 100 ft (30 m) upstream from Slide Creek, 8.5 mi (13.7 km) south of Prairie City, and at mile 9.0 (14.5 km).

DRAINAGE AREA.--7.00 mi^2 (18.13 km^2).

PERIOD OF RECORD.--October 1930 to current year. Prior to October 1944, published as "above South Fork, near Prairie City."

REVISED RECORDS.--WSP 1488: 1932-33. WSP 1738: Drainage area.

GAGE.--Water-stage recorder and log control. Datum of gage is 4,909.57 ft (1,496.437 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent. Flow affected by natural storage in Strawberry Lake. No diversion above station.

AVERAGE DISCHARGE.--51 years, 12.7 ft^3/s (0.360 m^3/s), 24.64 in/yr (626 mm/yr), 9,200 acre-ft/yr (11.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 274 ft^3/s (7.76 m^3/s) June 14, 1974, gage height, 2.20 ft (0.671 m), from rating curve extended above 190 ft^3/s (5.38 m^3/s); maximum gage height, 3.23 ft (0.985 m) May 24, 1956 (backwater from logs); minimum, discharge, 1.0 ft^3/s (0.028 m^3/s) Mar. 20, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 73 ft^3/s (2.07 m^3/s) June 9, gage height, 1.84 ft (0.561 m); minimum, 2.4 ft^3/s (0.068 m^3/s) Sept. 21-26, 29, 30.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	3.1	3.3	6.9	3.9	7.4	5.1	44	59	25	8.2	3.9
2	3.6	2.9	4.2	6.9	3.9	7.4	5.1	40	59	23	7.8	3.6
3	3.6	2.9	3.9	6.6	3.9	6.9	5.1	37	61	22	7.8	3.6
4	3.6	3.1	4.2	6.6	3.6	6.6	5.1	38	59	21	7.4	3.6
5	3.6	3.1	3.9	6.6	3.6	6.6	4.8	38	57	19	6.9	3.6
6	3.6	3.6	3.6	6.6	3.6	6.6	4.8	37	59	20	6.6	3.3
7	3.3	5.1	3.6	6.2	3.6	6.6	5.1	36	61	19	6.6	3.3
8	3.3	4.5	3.6	5.8	3.6	5.8	5.1	33	65	18	6.6	3.3
9	3.3	4.2	3.6	5.5	3.6	5.8	5.1	31	73	18	6.2	3.3
10	3.3	3.9	3.6	5.1	3.6	5.5	4.8	29	68	17	6.2	3.3
11	3.3	3.9	3.6	5.1	3.6	5.5	4.8	27	61	17	5.8	3.1
12	3.6	3.9	3.6	4.8	3.3	5.5	4.8	25	57	17	5.8	3.1
13	3.3	3.6	3.6	4.8	3.6	5.5	4.8	24	55	16	5.5	2.9
14	3.3	3.9	3.6	4.8	3.9	5.1	4.8	25	50	15	5.5	2.9
15	3.3	3.9	3.3	4.8	3.6	5.5	5.1	24	46	15	5.5	2.9
16	3.3	3.9	3.3	4.5	6.2	5.5	5.1	24	44	14	5.1	2.7
17	3.3	3.9	3.3	4.2	7.8	5.1	5.5	23	43	14	5.1	2.7
18	3.1	3.6	3.3	4.2	8.2	5.1	6.6	30	40	13	5.1	2.7
19	3.1	3.6	3.3	4.2	12	5.1	9.1	37	38	13	5.1	2.7
20	3.3	3.6	3.3	3.9	13	5.1	12	48	38	12	4.8	2.7
21	3.3	3.6	3.6	4.2	12	5.1	13	55	38	12	4.8	2.7
22	3.1	3.6	3.6	4.2	11	5.1	14	57	38	12	4.5	2.7
23	3.1	3.6	3.6	4.2	11	4.8	20	53	38	11	4.5	2.5
24	3.1	3.6	3.9	3.9	10	4.8	25	50	36	11	4.5	2.5
25	3.1	3.6	5.1	3.9	9.6	5.1	24	55	34	11	4.2	2.5
26	3.1	3.3	6.9	3.9	9.1	5.1	23	61	33	10	4.2	2.7
27	3.1	3.6	8.2	3.9	8.7	5.1	22	61	32	10	4.2	3.3
28	3.1	3.6	7.4	3.9	7.8	5.1	23	59	30	9.6	3.9	2.7
29	3.1	3.6	6.9	3.9	---	5.5	27	59	28	9.1	3.9	2.5
30	3.1	3.3	6.9	3.9	---	5.1	36	59	27	8.7	3.9	2.5
31	3.1	---	6.9	3.9	---	5.5	---	59	---	8.7	3.9	---
TOTAL	102.3	109.6	134.7	151.9	181.3	174.5	339.7	1278	1427	461.1	170.1	89.8
MEAN	3.30	3.65	4.35	4.90	6.48	5.63	11.3	41.2	47.6	14.9	5.49	2.99
MAX	3.9	5.1	8.2	6.9	13	7.4	36	61	73	25	8.2	3.9
MIN	3.1	2.9	3.3	3.9	3.3	4.8	4.8	23	27	8.7	3.9	2.5
CFSM	.47	.52	.62	.70	.93	.80	1.61	5.89	6.80	2.13	.78	.43
IN.	.54	.58	.72	.81	.96	.93	1.81	6.79	7.58	2.45	.90	.48
AC-FT	203	217	267	301	360	346	674	2530	2830	915	337	178

CAL YR 1980 TOTAL 5047.6 MEAN 13.8 MAX 73 MIN 2.0 CFSM 1.97 IN 26.82 AC-FT 10010
WTR YR 1981 TOTAL 4620.0 MEAN 12.7 MAX 73 MIN 2.5 CFSM 1.81 IN 24.55 AC-FT 9160

14038530 JOHN DAY RIVER NEAR JOHN DAY, OR

LOCATION (REVISED).--Lat 44°25'07", long 118°54'19", in SW¼SE¼ sec.19, T.13 S., R.32 E., Grant County, Hydrologic Unit 17070201, on left bank 1,200 ft (366 m) downstream from Dog Creek, 2.5 mi (4.0 km) east of John Day, and at mile 250.8 (403.5 km).

DRAINAGE AREA.--386 mi^2 (1,000 km^2).

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,130.56 ft (954.195 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulation from irrigation ditches upstream. Many diversions above station for irrigation.

AVERAGE DISCHARGE.--13 years, 194 ft^3/s (5.494 m^3/s), 140,600 acre-ft/yr (173 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,830 ft^3/s (165 m^3/s) June 9, 1969, gage height, 10.80 ft (3.292 m), from floodmark; minimum, 3.5 ft^3/s (0.099 m^3/s) Aug. 26-28, 1969.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft^3/s (22.7 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 18	2130	951	26.9	5.68	1.731	June 8	1600	895	25.3	5.53	1.686
Mar. 26	2200	951	26.9	5.63	1.716	June 12	1700	1,140	32.3	5.87	1.789
May 20	1730	*1,360	38.5	*6.05	1.844						

Minimum, 15 ft^3/s (0.42 m^3/s) Sept. 2, 3.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	96	110	194	110	207	439	559	517	91	52	18
2	73	91	170	185	100	198	403	566	462	85	51	16
3	75	93	189	174	100	185	346	490	420	87	52	17
4	75	93	280	162	100	198	310	464	365	82	42	20
5	75	93	185	158	100	189	295	427	365	87	43	19
6	70	104	155	151	100	170	280	368	474	140	43	19
7	57	144	121	141	100	174	270	341	492	278	37	18
8	61	144	91	144	90	185	260	320	706	180	31	18
9	68	125	104	144	90	170	260	280	678	150	28	22
10	75	121	144	137	99	162	245	260	545	135	26	20
11	75	118	125	137	115	162	235	250	456	123	28	21
12	77	115	110	131	121	162	225	230	881	111	31	22
13	86	110	101	128	131	158	212	212	692	105	31	20
14	101	107	104	125	230	155	207	305	545	100	29	23
15	112	118	107	125	207	155	212	433	462	101	22	27
16	107	112	115	121	403	174	225	458	415	96	19	31
17	101	112	125	128	458	158	225	379	385	94	19	27
18	110	110	118	125	608	151	245	490	346	89	21	23
19	107	110	112	128	685	151	320	629	338	85	28	23
20	104	110	118	125	503	174	397	1120	310	76	28	28
21	99	110	158	131	397	181	415	1250	290	72	30	34
22	99	121	194	131	352	203	385	1030	258	71	28	40
23	99	118	162	137	320	198	403	895	215	72	24	43
24	96	118	225	162	295	177	490	825	190	72	23	46
25	99	110	391	134	270	300	484	937	162	57	24	63
26	101	110	352	128	255	678	484	860	147	54	25	72
27	107	112	310	128	235	629	445	769	119	64	24	98
28	101	118	275	134	221	385	409	685	113	62	25	121
29	101	118	235	141	---	379	415	615	115	57	25	98
30	101	118	216	134	---	385	458	629	101	58	27	89
31	101	---	203	125	---	368	---	587	---	54	27	---
TOTAL	2783	3379	5405	4348	6795	7321	9999	17663	11564	2988	943	1136
MEAN	89.8	113	174	140	243	236	333	570	385	96.4	30.4	37.9
MAX	112	144	391	194	685	678	490	1250	881	278	52	121
MIN	57	91	91	121	90	151	207	212	101	54	19	16
AC-FT	5520	6700	10720	8620	13480	14520	19830	35030	22940	5930	1870	2250

CAL YR 1980 TOTAL 74123 MEAN 203 MAX 953 MIN 16 AC-FT 147000
WTR YR 1981 TOTAL 74324 MEAN 204 MAX 1250 MIN 16 AC-FT 147400

14040500 JOHN DAY RIVER AT PICTURE GORGE, NEAR DAYVILLE, OR

LOCATION.--Lat 44°31'15", long 119°37'30", in SW¼ sec.17, T.12 S., R.26 E., Grant County, Hydrologic Unit 17070201, on right bank 0.7 mi (1.1 km) upstream from Rock Creek, 5.5 mi (8.8 km) northwest of Dayville, and at mile 205.1 (330.0 km).

DRAINAGE AREA.--1,680 mi² (4,350 km²), approximately.

PERIOD OF RECORD.--April 1926 to current year. Monthly discharge only April 1926, published in WSP 1318.

REVISED RECORDS.--WSP 1218: 1950. WSP 1348: Drainage area. WSP 1448: 1926, 1928, 1932(M), 1936.

GAGE.--Water-stage recorder. Datum of gage is 2,229.84 ft (679.655 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 11, 1926, nonrecording gage and Oct. 11, 1926, to Sept. 30, 1930, water-stage recorder at same site at datum 2.50 ft (0.762 m) higher. Oct. 1, 1930, to Aug. 28, 1970, at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records excellent except those for period of no gage-height record May 28 to June 29, which are fair. No regulation. Many diversions for irrigation above station.

AVERAGE DISCHARGE.--55 years, 468 ft³/s (13.25 m³/s), 339,100 acre-ft/yr (418 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,170 ft³/s (231 m³/s) Dec. 22, 1964, gage height, 14.97 ft (4.563 m); minimum, 1.0 ft³/s (0.028 m³/s) for several days in August and September 1930, Aug. 8, 9, 1936, Sept. 9, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft³/s (51.0 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 16	2400	*3,030	85.8	*9.43	2.874	May 20	0900	2,820	79.9	9.18	2.798
Feb. 19	0330	2,600	73.6	8.90	2.713	June 9	unknown	2,120	60.0	8.21	2.502
Mar. 27	0630	2,260	64.0	8.44	2.573						

Minimum, 6.2 ft³/s (0.18 m³/s) Aug. 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130	191	215	442	272	575	1360	1100	1000	265	62	21
2	129	189	251	421	244	567	1390	1190	900	251	51	19
3	126	191	358	397	260	587	1240	1130	800	232	49	20
4	124	198	412	374	267	536	1110	1020	760	217	56	21
5	133	200	409	366	272	511	1030	936	700	213	53	20
6	130	219	344	350	279	533	995	868	660	226	49	21
7	126	277	296	323	255	500	950	799	780	377	43	21
8	120	258	224	321	244	450	914	744	1000	385	39	22
9	118	244	221	321	251	500	897	649	1400	321	38	22
10	122	237	248	308	244	490	851	575	1300	284	36	20
11	126	230	277	299	239	480	793	540	1200	267	34	18
12	129	221	265	291	275	477	758	511	1000	248	33	17
13	139	209	241	279	296	474	730	467	1100	226	29	17
14	163	219	237	270	788	464	689	500	1050	213	29	17
15	185	217	239	272	868	464	658	804	940	202	28	16
16	200	213	246	262	1300	500	662	914	800	184	21	17
17	198	213	258	277	2060	490	693	873	870	173	17	17
18	192	209	262	279	1690	467	716	914	800	157	15	20
19	196	213	255	277	2230	461	783	1590	720	149	16	25
20	191	209	260	272	1420	504	1060	2260	660	139	16	31
21	185	209	299	272	1160	556	1140	2220	600	134	16	32
22	184	221	406	279	1040	645	1120	1890	580	122	16	29
23	187	230	394	284	963	645	1040	1790	520	109	17	29
24	189	228	374	318	884	599	1090	2050	480	106	16	33
25	191	219	1000	306	788	753	1190	1810	430	112	16	41
26	194	213	910	289	689	1640	1160	1570	400	111	17	57
27	196	213	758	291	641	1960	1230	1380	360	106	17	99
28	194	215	645	299	603	1460	1130	1300	330	89	16	157
29	194	217	556	323	---	1320	1060	1200	300	84	17	163
30	194	217	500	323	---	1330	1040	1100	275	75	18	152
31	191	---	467	308	---	1230	---	1050	---	66	20	---
TOTAL	5076	6539	11827	9693	20522	22168	29479	35744	22715	5843	900	1194
MEAN	164	218	382	313	733	715	983	1153	757	188	29.0	39.8
MAX	200	277	1000	442	2230	1960	1390	2260	1400	385	62	163
MIN	118	189	215	262	239	450	658	467	275	66	15	16
AC-FT	10070	12970	23460	19230	40710	43970	58470	70900	45060	11590	1790	2370

CAL YR 1980 TOTAL 187547 MEAN 512 MAX 1900 MIN 41 AC-FT 372000
WTR YR 1981 TOTAL 171700 MEAN 470 MAX 2260 MIN 15 AC-FT 340600

14042500 CAMAS CREEK NEAR UKIAH, OR

LOCATION.--Lat 45°09'25", long 118°49'10", in SE¼SE¼ sec.3, T.5 S., R.32 E., Umatilla County, Hydrologic Unit 17070202, on right bank 1.2 mi (1.9 km) upstream from Cable Creek, 5.8 mi (9.3 km) east of Ukiah, and at mile 18.7 (30.1 km).

DRAINAGE AREA.--121 mi^2 (313 km^2).

PERIOD OF RECORD.--May 1914 to September 1917, November 1919 to July 1920, November 1920 to June 1924, March 1932 to June 1940 (fragmentary), November 1940 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as "above Cable Creek, near Ukiah" 1914-17, 1919-24.

REVISED RECORDS.--WSP 1448: 1916, 1920, 1922(M), 1924.

GAGE.--Water-stage recorder. Datum of gage is 3,588.61 ft (1,093.808 m) National Geodetic Vertical Datum of 1929 (levels by State Highway Department). May 1, 1914, to June 30, 1924, nonrecording gage and Mar. 1, 1932, to July 2, 1940, water-stage recorder at site 1.2 mi (1.9 km) downstream at different datum.

REMARKS.--Records good except those for December to February, which are fair. No regulation. Diversions for irrigation above station.

AVERAGE DISCHARGE.--45 years (water years 1915-17, 1922-23, 1942-81), 94.9 ft^3/s (2.688 m^3/s), 68,760 acre-ft/yr (84.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,840 ft^3/s (109 m^3/s) Jan. 30, 1965, gage height, 5.21 ft (1.588 m); maximum gage height, 5.24 ft (1.597 m) Feb. 3, 1963 (ice Jam); minimum discharge recorded, 1.0 ft^3/s (0.028 m^3/s) Aug. 9, 1932, June 24 to July 2, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 550 ft^3/s (15.6 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 18	2330	*831	23.5	*2.73	0.832	Mar. 27	2000	758	21.5	2.64	0.805

Minimum, 2.5 ft^3/s (0.071 m^3/s) Sept. 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	7.2	23	84	22	103	356	252	121	35	8.1	4.0
2	6.0	7.6	34	77	18	94	310	223	112	33	7.6	4.0
3	5.6	8.1	50	66	14	86	268	182	96	30	8.1	3.7
4	5.6	8.1	66	60	17	88	226	170	86	27	7.6	3.7
5	5.6	8.1	54	52	16	81	216	158	84	26	6.8	3.7
6	5.6	11	44	52	17	65	202	142	119	30	6.8	3.7
7	5.6	21	30	45	18	75	189	142	119	52	6.4	3.7
8	5.6	23	22	41	15	86	176	153	248	37	6.0	3.5
9	6.0	18	15	44	14	88	170	139	370	28	5.6	3.2
10	6.0	16	30	45	13	86	155	131	310	24	5.6	3.2
11	6.0	14	40	32	12	82	147	124	241	22	5.0	3.2
12	6.8	13	36	22	14	81	155	114	209	21	5.3	3.2
13	8.5	12	38	14	20	79	153	105	195	19	5.6	3.2
14	12	10	40	10	60	75	153	144	164	18	5.3	3.5
15	16	7.0	43	8.8	153	75	189	205	144	17	5.0	3.2
16	15	12	46	8.0	375	105	252	276	150	15	5.3	3.0
17	12	11	43	7.6	390	96	276	310	153	15	4.6	2.7
18	10	10	40	9.0	523	88	306	272	131	13	4.6	2.7
19	9.5	10	50	11	697	88	356	260	136	13	4.6	3.2
20	9.0	10	60	14	432	86	370	328	124	13	4.3	3.5
21	8.5	10	76	17	297	82	337	342	110	12	4.6	3.5
22	8.1	12	82	26	257	112	306	293	96	12	4.3	3.7
23	8.1	11	92	29	202	129	314	245	86	11	4.0	3.7
24	8.1	12	136	29	176	126	395	226	75	10	4.3	4.0
25	8.1	15	248	24	155	216	346	319	66	10	4.0	4.3
26	8.1	15	323	21	142	438	323	293	60	9.5	4.0	4.6
27	8.5	11	219	22	126	584	289	241	54	9.5	4.0	9.0
28	7.6	13	164	25	114	553	264	202	48	8.5	4.0	10
29	7.6	14	129	24	---	506	241	170	43	8.5	4.0	7.2
30	7.6	13	112	24	---	385	233	164	39	8.5	4.0	6.0
31	7.6	---	96	22	---	342	---	144	---	8.1	4.0	---
TOTAL	250.3	363.1	2481	965.4	4289	5180	7673	6469	3989	595.6	163.4	123.8
MEAN	8.07	12.1	80.0	31.1	153	167	256	209	133	19.2	5.27	4.13
MAX	16	23	323	84	697	584	395	342	370	52	8.1	10
MIN	5.6	7.0	15	7.6	12	65	147	105	39	8.1	4.0	2.7
AC-FT	496	720	4920	1910	8510	10270	15220	12830	7910	1180	324	246

CAL YR 1980 TOTAL 31581.5 MEAN 86.3 MAX 449 MIN 5.0 AC-FT 62640
WTR YR 1981 TOTAL 32542.6 MEAN 89.2 MAX 697 MIN 2.7 AC-FT 64550

14044000 MIDDLE FORK JOHN DAY RIVER AT RITTER, OR

LOCATION.--Lat 44°53'20", long 119°08'25", in SW¼NW¼ sec.8, T.8 S., R.30 E., Grant County, Hydrologic Unit 17070203, on left bank 0.2 mi (0.3 km) south of Ritter, 0.8 mi (1.3 km) downstream from Twelvemile Creek, and at mile 14.9 (24.0 km).

DRAINAGE AREA.--515 mi² (1,334 km²).

PERIOD OF RECORD.--October 1929 to current year.

REVISED RECORDS.--WSP 739: 1931. WSP 1218: 1950. WSP 1448: 1930-32, 1937, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,544.56 ft (775.582 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Aug. 27 to Sept. 30, which are fair. No regulation. Diversions for irrigation above station.

AVERAGE DISCHARGE.--52 years, 243 ft³/s (6.882 m³/s), 176,100 acre-ft/yr (217 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,730 ft³/s (134 m³/s) Jan. 30, 1965, gage height, 8.39 ft (2.557 m), from rating curve extended above 2,200 ft³/s (62.3 m³/s); maximum gage height, 9.13 ft (2.783 m) Feb. 1, 1963, ice jam; minimum discharge, 0.90 ft³/s (0.025 m³/s) Aug. 19, 20, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 16	1830	1,270	36.0	5.17	1.575	Mar. 26	2300	*1,500	42.5	*5.41	1.649
Feb. 19	1330	1,000	28.3	4.85	1.478						

Minimum, 16 ft³/s (0.45 m³/s) Dec. 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	44	48	167	68	221	731	821	500	138	46	22
2	39	45	49	152	53	213	637	797	460	131	45	23
3	38	45	90	138	82	201	571	659	422	123	45	23
4	37	45	162	124	73	213	523	601	390	115	41	23
5	37	44	121	123	76	203	473	546	375	109	39	22
6	37	47	88	106	85	162	438	490	477	113	37	22
7	36	59	59	95	66	182	410	438	434	196	34	21
8	37	90	36	96	70	208	379	426	606	165	32	21
9	37	71	22	106	65	201	371	398	784	129	31	21
10	35	60	37	87	53	189	345	375	648	115	29	21
11	34	54	54	90	52	189	325	360	546	104	27	20
12	35	52	67	81	64	191	318	338	546	99	26	20
13	41	46	59	73	96	196	312	325	642	92	24	20
14	48	34	60	65	150	199	293	386	571	88	24	20
15	63	53	66	67	258	201	299	642	513	85	24	19
16	60	49	78	65	664	234	338	586	482	81	24	19
17	52	51	79	74	821	234	371	509	468	76	24	20
18	49	52	73	82	697	211	406	495	418	71	23	19
19	47	50	70	101	929	208	532	556	402	67	23	19
20	46	50	75	83	714	211	691	731	363	65	37	19
21	45	50	103	85	518	234	686	908	328	63	39	20
22	44	55	143	88	447	296	627	772	299	60	34	20
23	44	59	154	96	394	342	642	708	273	57	29	21
24	43	54	158	124	363	306	766	686	247	55	26	22
25	44	47	345	104	325	402	731	874	223	54	24	23
26	45	44	430	90	293	1060	720	887	203	53	23	25
27	46	52	360	90	261	1240	743	761	184	51	22	35
28	45	56	287	93	239	881	659	680	173	50	22	50
29	44	55	234	103	---	778	648	621	162	49	22	64
30	44	57	203	100	---	714	680	627	148	48	22	50
31	44	---	184	92	---	642	---	576	---	47	22	---
TOTAL	1334	1570	3994	3040	7976	10962	15665	18579	12287	2749	920	744
MEAN	43.0	52.3	129	98.1	285	354	522	599	410	88.7	29.7	24.8
MAX	63	90	430	167	929	1240	766	908	784	196	46	64
MIN	34	34	22	65	52	162	293	325	148	47	22	19
AC-FT	2650	3110	7920	6030	15820	21740	31070	36850	24370	5450	1820	1480

CAL YR 1980 TOTAL 86428 MEAN 236 MAX 881 MIN 22 AC-FT 171400
WTR YR 1981 TOTAL 79820 MEAN 219 MAX 1240 MIN 19 AC-FT 158300

14046000 NORTH FORK JOHN DAY RIVER AT MONUMENT, OR

LOCATION.--Lat 44°48'50", long 119°25'50", in SE¼ sec.2, T.9 S., R.27 E., Grant County, Hydrologic Unit 17070202, on right bank just downstream from entrance to canyon, 0.7 mi (1.1 km) downstream from Cottonwood Creek, 0.8 mi (1.3 km) west of Monument, and at mile 15.3 (24.6 km).

DRAINAGE AREA.--2,520 mi² (6,530 km²), approximately.

PERIOD OF RECORD.--March 1925 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 754: 1932(M). WSP 1448: 1927, 1931(M), 1949.

GAGE.--Water-stage recorder. Datum of gage is 1,959.64 ft (597.298 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 24, 1925, nonrecording gage and Nov. 24, 1925, to Oct. 16, 1928, water-stage recorder at datum 1.10 ft (0.335 m) higher. Oct. 17, 1928, to Sept. 30, 1930, water-stage recorder at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records excellent. Very slight regulation by small reservoirs upstream. Many small diversions for irrigation above station.

AVERAGE DISCHARGE.--56 years, 1,229 ft³/s (34.81 m³/s), 890,400 acre-ft/yr (1.10 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,400 ft³/s (946 m³/s) Jan. 30, 1965, gage height, 18.45 ft (5.624 m), from rating curve extended above 17,000 ft³/s (481 m³/s); minimum, 6 ft³/s (0.17 m³/s) sometime during period Nov. 2-13, 1936 (result of freezeup); minimum daily, 17 ft³/s (0.48 m³/s) Dec. 12, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,300 ft³/s (150 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 16	2400	*9,430	267	*9.51	2.899	Apr. 24	0930	5,830	165	7.85	2.393
Mar. 27	0600	9,320	264	9.46	2.883	May 25	2400	5,310	150	7.57	2.307

Minimum, 78 ft³/s (2.21 m³/s) Sept. 18-20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	141	168	227	1050	464	1330	4360	4850	2530	755	198	96
2	138	168	209	958	317	1250	3850	4710	2280	705	191	96
3	135	174	393	870	304	1170	3290	3810	2120	664	188	96
4	133	178	748	748	425	1190	2850	3280	1920	618	184	96
5	130	178	847	698	363	1200	2530	3020	1860	580	174	94
6	127	191	605	651	404	1030	2330	2700	2200	586	168	92
7	125	234	441	544	409	975	2150	2370	2220	831	162	92
8	122	452	264	518	335	1090	1990	2300	2970	917	153	92
9	122	441	171	550	313	1200	1950	2070	4680	705	144	90
10	122	326	147	524	296	1110	1830	1950	3870	605	141	88
11	122	283	256	430	279	1050	1700	1860	3320	550	135	86
12	130	256	309	430	317	1040	1660	1770	3060	512	125	84
13	141	234	300	383	436	1030	1650	1660	3210	481	122	84
14	174	168	241	340	1130	1030	1540	1680	2860	447	125	84
15	216	133	296	304	2040	1030	1600	3010	2530	425	120	82
16	260	241	359	292	4150	1260	1930	3150	2290	398	127	82
17	241	206	313	279	6230	1330	2210	2790	2600	368	117	82
18	220	209	292	419	4800	1190	2480	2690	2210	340	112	82
19	202	213	296	464	6830	1140	3210	3220	2100	322	110	80
20	191	202	309	436	5180	1150	4230	3920	2000	309	115	80
21	184	209	409	409	3580	1200	4190	4960	1770	292	133	84
22	184	223	941	452	2910	1580	3710	4110	1610	279	127	88
23	184	252	1100	481	2470	2030	3840	3620	1470	264	115	90
24	168	241	958	586	2210	1700	5250	3310	1350	256	105	92
25	171	216	2390	556	1950	2060	4950	4260	1230	248	101	101
26	178	181	3090	476	1760	6230	4520	4680	1130	241	96	110
27	181	202	2550	425	1580	8020	4540	3810	1030	234	94	150
28	181	220	1930	476	1440	5830	3980	3290	958	223	92	209
29	174	241	1490	568	---	4850	3850	2970	893	213	92	271
30	168	241	1290	580	---	4360	3930	3040	823	206	92	213
31	171	---	1180	537	---	3780	---	3050	---	202	94	---
TOTAL	5136	6881	24351	16434	52922	64435	92100	97910	65094	13776	4052	3166
MEAN	166	229	786	530	1890	2079	3070	3158	2170	444	131	106
MAX	260	452	3090	1050	6830	8020	5250	4960	4680	917	198	271
MIN	122	133	147	279	279	975	1540	1660	823	202	92	80
AC-FT	10190	13650	48300	32600	105000	127800	182700	194200	129100	27320	8040	6280

CAL YR 1980 TOTAL 480234 MEAN 1312 MAX 5250 MIN 113 AC-FT 952500
WTR YR 1981 TOTAL 446257 MEAN 1223 MAX 8020 MIN 80 AC-FT 885200

14046500 JOHN DAY RIVER AT SERVICE CREEK, OR

LOCATION.--Lat 44°47'38", long 120°00'20", in NW¼NE¼ sec.18, T.9 S., R.23 E., Wheeler County, Hydrologic Unit 17070204, on left bank 0.2 mi (0.3 km) downstream from bridge on State Highway 207, 0.8 mi (1.3 km) downstream from Service Creek, 0.5 mi (0.8 km) southwest of town of Service Creek, and at mile 156.7 (252.1 km).

DRAINAGE AREA.--5,090 mi² (13,200 km²), approximately.

PERIOD OF RECORD.--March 1925 to September 1926, October 1929 to current year. Monthly discharge only March 1925 to September 1926, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 1,632.42 ft (497.562 m) National Geodetic Vertical Datum of 1929. See WSP 1738 for history of changes prior to Feb. 24, 1957.

REMARKS.--Records excellent. Very slight regulation by several small reservoirs above station. Many small diversions for irrigation above station.

AVERAGE DISCHARGE.--53 years, 1,833 ft³/s (51.91 m³/s), 1,328,000 acre-ft/yr (1.64 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,200 ft³/s (1,140 m³/s) Dec. 23, 1964, gage height, 17.85 ft (5.441 m), from rating curve extended above 14,000 ft³/s (396 m³/s) on basis of slope-area measurement of peak flow; minimum, 6.0 ft³/s (0.17 m³/s) Aug. 23, 24, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,300 ft³/s (207 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 17	0630	*12,000	340	*10.01	3.051	May 21	1300	7,900	224	8.24	2.512
Mar. 27	1300	11,400	323	9.77	2.978						

Minimum, 69 ft³/s (1.95 m³/s) Sept. 18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	279	397	511	1810	943	2310	5790	5740	4290	1150	236	90
2	266	397	511	1670	780	2170	5720	6180	3740	1070	224	90
3	266	397	560	1550	640	2080	5100	5470	3410	1010	220	97
4	261	397	1010	1400	708	2000	4550	4740	3080	932	209	102
5	257	403	1450	1280	780	2100	4010	4440	2890	875	209	109
6	257	423	1230	1210	749	1930	3740	4040	2920	864	195	111
7	249	458	979	1090	790	1700	3480	3580	3480	932	184	106
8	236	543	698	979	718	1820	3280	3350	3630	1480	174	104
9	224	843	473	979	659	1960	3110	3080	5810	1250	165	95
10	224	708	444	1010	631	1900	3030	2810	5530	1020	153	90
11	232	603	496	920	586	1850	2820	2670	4890	898	159	86
12	236	560	631	843	640	1750	2730	2560	4440	832	141	84
13	261	527	640	801	738	1700	2680	2400	5180	790	127	93
14	284	496	612	749	1250	1700	2550	2320	4710	718	135	82
15	342	423	577	688	3330	1700	2480	3320	4190	668	135	82
16	423	397	612	659	3810	1750	2680	4310	3690	640	124	74
17	481	511	631	631	9250	2100	3080	4170	3720	586	127	72
18	458	466	640	678	6520	2000	3350	3810	3480	543	119	72
19	437	473	659	801	9180	1870	3900	4830	3170	503	106	82
20	423	473	640	853	8160	1940	5290	5320	3070	473	106	74
21	410	466	678	790	5760	2060	5550	7570	2780	437	102	76
22	390	481	1020	811	4640	2320	5210	6890	2530	417	114	88
23	390	503	1770	853	4030	3130	5030	6040	2320	390	119	99
24	397	543	1610	920	3580	2820	6010	5460	2130	359	114	102
25	390	519	2620	1060	3280	2780	6480	6060	1940	342	111	104
26	397	481	3990	943	2950	7080	5950	7080	1740	330	99	119
27	403	451	3950	853	2700	10200	6040	6020	1590	330	95	165
28	410	473	3130	853	2480	8200	5550	5310	1460	308	90	253
29	410	496	2550	943	---	6580	5230	4780	1300	275	82	372
30	403	519	2170	1070	---	6260	5180	4710	1200	261	84	437
31	397	---	1990	1020	---	5460	---	4850	---	253	84	---
TOTAL	10493	14827	39482	30717	80282	95220	129600	143910	98310	20936	4342	3610
MEAN	338	494	1274	991	2867	3072	4320	4642	3277	675	140	120
MAX	481	843	3990	1810	9250	10200	6480	7570	5810	1480	236	437
MIN	224	397	444	631	586	1700	2480	2320	1200	253	82	72
AC-FT	20810	29410	78310	60930	159200	188900	257100	285400	195000	41530	8610	7160

CAL YR 1980 TOTAL 698432 MEAN 1908 MAX 7040 MIN 111 AC-FT 1385000
WTR YR 1981 TOTAL 671729 MEAN 1840 MAX 10200 MIN 72 AC-FT 1332000

14047390 ROCK CREEK ABOVE WHYTE PARK, NEAR CONDON, OR

LOCATION.--Lat 45°15'53", long 120°01'15", in NE¼SW¼ sec.36, T.3 S., R.22 E., Gilliam County, Hydrologic Unit 17070204, on left bank 0.2 mi (0.3 km) upstream from Whyte Park, 8.0 mi (12.9 km) northeast of Condon, and at mile 40.8 (65.6 km).

DRAINAGE AREA.--297 mi^2 (769 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,714.50 ft (522.580 m) National Geodetic Vertical Datum of 1929 (Soil Conservation Service temporary bench mark).

REMARKS.--Records good. No regulation or diversion above station.

AVERAGE DISCHARGE.--6 years, 37.2 ft^3/s (1.054 m^3/s), 26,950 acre-ft/yr (33.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,800 ft^3/s (51.0 m^3/s) Feb. 6, 1979, gage height, 8.51 ft (2.594 m) in gage well, 9.4 ft (2.87 m), from outside gage; minimum, 0.08 ft^3/s (0.002 m^3/s) Aug. 17, 19, 20, 22, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 220 ft^3/s (6.23 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 16	2230	374	10.6	6.33	1.929	Mar. 27	1230	271	7.67	6.07	1.850
Feb. 19	0600	304	8.61	6.13	1.868	May 25	1330	*405	11.5	*6.42	1.957

Minimum, 0.37 ft^3/s (0.010 m^3/s) Sept. 9-20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	6.5	8.2	22	17	54	143	30	56	9.4	1.1	.69
2	1.8	7.0	8.2	21	15	48	119	27	47	8.2	.93	.69
3	2.1	7.0	9.4	20	21	46	105	25	41	7.6	.93	.69
4	2.1	6.5	13	19	20	44	96	25	35	6.5	.93	.59
5	2.1	6.5	14	18	19	46	85	24	34	5.5	.93	.59
6	2.1	6.5	13	17	17	40	76	23	44	5.9	.93	.59
7	2.1	11	11	17	13	43	69	23	46	7.6	.69	.51
8	2.1	9.4	8.2	15	16	40	65	24	69	7.0	.69	.51
9	1.8	8.9	8.6	15	16	39	64	23	92	6.5	.69	.43
10	2.1	8.9	8.9	15	12	36	64	20	82	5.9	.69	.37
11	2.1	8.2	9.4	14	16	34	56	19	78	5.5	.59	.37
12	2.1	8.2	9.4	13	22	32	62	17	64	5.0	.59	.37
13	2.4	7.0	9.4	12	28	30	69	16	64	4.6	.69	.37
14	2.4	7.0	8.9	11	169	29	57	16	54	4.2	.59	.37
15	3.0	7.0	8.9	11	204	28	51	17	47	3.8	.51	.37
16	3.8	7.0	8.9	11	243	35	46	23	40	3.4	.51	.37
17	3.8	7.0	9.4	11	263	46	40	24	38	3.4	.43	.37
18	3.8	7.0	9.9	11	225	39	38	25	34	3.0	.43	.37
19	3.8	7.0	10	11	279	35	36	65	32	2.7	.43	.37
20	3.8	7.0	9.9	11	211	34	56	82	30	2.4	.59	.43
21	3.8	7.0	9.9	11	155	40	51	64	27	2.1	.59	.43
22	3.8	7.0	36	11	127	94	44	51	23	1.8	.59	.51
23	3.8	7.0	30	13	112	119	39	41	21	1.8	.59	.59
24	3.8	7.0	24	14	98	92	39	38	19	1.8	.59	.59
25	5.0	7.6	41	15	84	94	40	214	17	1.8	.59	.69
26	5.0	8.2	59	15	72	204	38	211	15	1.8	.59	.80
27	5.0	8.2	46	14	64	243	46	127	13	1.5	.59	2.1
28	5.0	8.2	35	14	59	197	46	92	13	1.3	.59	2.1
29	5.0	8.2	30	18	---	152	38	74	12	1.1	.59	1.8
30	5.5	8.2	26	23	---	140	33	69	11	1.1	.59	1.5
31	5.9	---	24	22	---	122	---	67	---	1.1	.69	---
TOTAL	102.4	227.2	557.5	465	2597	2275	1811	1596	1198	125.3	20.46	20.53
MEAN	3.30	7.57	18.0	15.0	92.8	73.4	60.4	51.5	39.9	4.04	.66	.68
MAX	5.9	11	59	23	279	243	143	214	92	9.4	1.1	2.1
MIN	1.5	6.5	8.2	11	12	28	33	16	11	1.1	.43	.37
AC-FT	203	451	1110	922	5150	4510	3590	3170	2380	249	41	41

CAL YR 1980 TOTAL 14681.70 MEAN 40.1 MAX 422 MIN 1.1 AC-FT 29120
WTR YR 1981 TOTAL 10995.39 MEAN 30.1 MAX 279 MIN .37 AC-FT 21810

14047390 ROCK CREEK ABOVE WHYTE PARK, NEAR CONDON, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
OCT 20...	1430	3.9	306	8.1	12.0	110	29	9.9	22	4.1	140	16

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)
OCT 20...	8.9	.3	< .10	.040	.67	.030	.77	.83	.070	.070	5.1

DATE	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	TUR-BID-ITY (NTU)	ARSENIC DIS-SOLVED (UG/L AS AS)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)
OCT 20...	.2	36	203	211	2.1	1.1	1	1	50	< 100	< 1

DATE	BORON, DIS-SOLVED (UG/L AS B)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CADMIUM DIS-SOLVED (UG/L AS CD)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 20...	20	20	< 1	< 1	< 10	< 10	< 3	2	< 10	25	18

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)
OCT 20...	180	< 10	4	11	30	< .1	2.1	< 10	< 1	6	< 1

DATE	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI)	LITHIUM DIS-SOLVED (UG/L AS LI)
OCT 20...	< 1	< 1	< 1	140	18	21	70	30	60	< 10	5

14048000 JOHN DAY RIVER AT MCDONALD FERRY, OR
(National stream-quality accounting network station)

LOCATION.--Lat 45°35'16", long 120°24'30", in NE¼NW¼ sec.11, T.1 N., R.19 E., Sherman County, Hydrologic Unit 17070204, on left bank at McDonald Ferry, 0.8 mi (1.3 km) downstream from Rock Creek, 10 mi (16 km) east of Klondike, and at mile 20.9 (33.6 km).

DRAINAGE AREA.--7,580 mi² (19,600 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1904 to current year. Prior to Oct. 1, 1930, published as "at McDonald."

REVISED RECORDS.--WSP 1094: 1894(M), 1932(M). WSP 1448: 1908-9, 1912, 1916, 1920(M), 1922, 1932.

GAGE.--Water-stage recorder. Datum of gage is 392.27 ft (119.564 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 30, 1930, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records excellent. No regulation. Many diversions for irrigation above station.

AVERAGE DISCHARGE.--76 years (water years 1906-81), 2,013 ft³/s (57.01 m³/s), 1,458,000 acre-ft/yr (1.80 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,800 ft³/s (1,210 m³/s) Dec. 24, 1964, gage height, 13.59 ft (4.142 m), from floodmark, from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of slope-area measurement of peak flow; no flow for part of Sept. 2, 1966, Aug. 15 to Sept. 16, 1973, Aug. 13, 14, 19-25, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1894 reached a stage of 12.8 ft (3.90 m), from floodmarks, discharge, 39,100 ft³/s (1,110 m³/s), from rating curve extended above 22,000 ft³/s (623 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,900 ft³/s (195 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 18	0430	*13,000	368	*8.07	2.460	May 22	1130	8,510	241	6.70	2.042
Feb. 20	1000	11,700	331	7.71	2.350	May 27	0400	8,450	239	6.68	2.036
Mar. 28	1030	12,900	365	8.05	2.454	June 10	1230	7,150	202	6.21	1.893
Apr. 25	1730	7,390	209	6.30	1.920						

Minimum, 57 ft³/s (1.61 m³/s) Sept. 22.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	335	432	511	2090	1160	2810	6040	5350	5120	1270	245	75
2	329	439	581	1930	1080	2570	6380	5990	4470	1170	235	75
3	306	432	589	1760	995	2390	6230	6460	3970	1080	225	68
4	300	432	565	1640	874	2280	5530	5630	3690	1020	210	68
5	288	432	589	1520	760	2180	4920	4880	3380	954	205	68
6	283	426	1100	1400	807	2210	4340	4510	3160	903	195	85
7	283	439	1400	1320	864	2130	4090	4130	3120	854	181	91
8	272	467	1130	1250	826	1910	3810	3730	3790	845	181	109
9	266	489	944	1110	854	1860	3570	3460	3910	1010	181	105
10	250	511	707	1050	797	1970	3360	3250	6330	1350	162	105
11	250	663	542	1050	733	2060	3310	2950	6040	1110	162	113
12	240	742	526	1060	716	1930	3070	2740	5280	954	154	109
13	245	681	526	974	724	1860	2960	2610	4720	854	141	105
14	261	630	622	913	1060	1820	2880	2440	5530	807	133	91
15	261	597	630	874	1410	1820	2740	2330	5030	760	133	88
16	245	565	647	826	3200	1820	2620	3000	4490	689	129	85
17	245	534	622	779	4510	1830	2720	4260	4010	647	121	82
18	240	475	647	751	10500	2150	3140	4240	3910	605	113	85
19	240	504	681	716	7940	2150	3440	4030	3850	550	105	72
20	283	511	689	751	10800	2010	4050	5030	3400	504	98	65
21	405	504	716	874	9180	2030	5560	5650	3290	467	98	65
22	432	511	716	913	6560	2130	5870	8190	3020	446	91	60
23	432	497	760	864	5280	2390	5510	7310	2710	412	75	62
24	419	511	1330	864	4590	3340	5440	6310	2430	386	72	82
25	419	534	1770	913	4090	3250	6430	6160	2220	373	75	82
26	426	565	2040	985	3750	3110	6870	7290	2010	354	88	88
27	432	557	4090	1090	3360	7800	6310	7940	1800	329	85	121
28	426	526	4260	1010	3070	11600	6430	6480	1640	317	85	141
29	426	497	3420	933	---	8970	5790	5650	1510	306	85	154
30	432	497	2810	964	---	7290	5440	5050	1390	294	85	190
31	432	---	2330	1100	---	6890	---	4940	---	277	75	---
TOTAL	10103	15600	38490	34274	90490	100560	138850	151990	109220	21897	4223	2789
MEAN	326	520	1242	1106	3232	3244	4628	4903	3641	706	136	93.0
MAX	432	742	4260	2090	10800	11600	6870	8190	6330	1350	245	190
MIN	240	426	511	716	716	1820	2620	2330	1390	277	72	60
AC-FT	20040	30940	76340	67980	179500	199500	275400	301500	216600	43430	8380	5530

CAL YR 1980 TOTAL 767089 MEAN 2096 MAX 9000 MIN 121 AC-FT 1522000
WTR YR 1981 TOTAL 718486 MEAN 1968 MAX 11600 MIN 60 AC-FT 1425000

14048000 JOHN DAY RIVER AT MCDONALD FERRY, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1911-12, 1960-68, 1975 to September 1981 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1975 to September 1981 (discontinued).
WATER TEMPERATURES: October 1962 to September 1968, October 1975 to September 1981 (discontinued).
SEDIMENT CONCENTRATIONS: October 1962 to September 1968.
SEDIMENT DISCHARGE: October 1962 to September 1968.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 438 micromhos July 1, 1978; minimum, 70 micromhos Apr. 3, 1978.
WATER TEMPERATURES: Maximum, 33.0°C Aug. 12, 1977; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 357 micromhos Sept. 15, 16; minimum, 113 micromhos Apr. 23.
WATER TEMPERATURES: Maximum, 30.5°C Aug. 12; minimum, 0.0°C Feb. 10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT												
15...	1015	291	--	8.5	11.5	--	K14	K23	120	.00	28	13
NOV												
19...	0930	527	245	8.1	6.0	11.3	145	140	96	.00	22	9.9
DEC												
16...	1050	695	235	--	3.0	12.8	110	120	96	.00	22	10
JAN												
13...	1010	985	208	8.0	3.0	13.3	--	130	85	.00	21	7.8
FEB												
10...	1050	767	223	8.3	.0	13.5	K2	K3	95	.00	22	9.7
MAR												
11...	0925	2150	192	7.9	8.0	11.0	<1	K44	80	--	19	8.0
APR												
23...	0955	5640	117	7.7	15.0	9.4	100	110	49	.00	12	4.7
MAY												
14...	0835	2550	145	7.8	15.5	9.7	K12	K25	62	.00	15	5.9
JUN												
03...	0930	4040	147	7.6	18.0	8.4	48	61	58	.00	13	6.1
JUL												
01...	0930	1300	195	8.1	19.0	7.8	K23	K22	100	2.0	27	8.2
29...	0900	321	277	8.2	19.0	8.6	K9	230	110	.00	24	11
SEP												
16...	0930	82	353	7.8	17.0	8.3	K16	83	130	.00	26	15

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT												
15...	21	2.6	150	17	4.9	.2	<.10	<.010	.55	<.010	.58	.58
NOV												
19...	12	2.2	120	2.0	2.7	.2	<.10	.030	.56	.050	.60	.61
DEC												
16...	13	1.8	120	11	2.6	.2	<.10	.050	.46	.040	.49	.52
JAN												
13...	10	1.5	100	10	1.8	.2	<.10	.060	.45	.110	.54	.64
FEB												
10...	12	1.5	110	8.5	2.3	.2	<.10	.030	.25	.020	.36	.36
MAR												
11...	9.4	1.4	86	6.3	1.6	.1	<.10	.050	.62	.050	.60	.69
APR												
23...	5.2	1.4	55	1.4	.7	<.1	.32	.110	.35	.140	.79	1.2
MAY												
14...	7.1	1.5	80	1.0	1.1	<.1	<.10	.060	.33	.070	.53	.59
JUN												
03...	6.9	1.4	66	2.3	.9	.1	<.10	<.010	.54	.070	.73	.78
JUL												
01...	9.6	1.9	99	<1.0	1.6	.1	<.10	.060	.50	.050	.62	.62
29...	3.2	2.6	120	<1.0	3.2	.1	.11	.140	.51	.140	.80	.92
SEP												
16...	27	3.3	170	7.0	5.5	.2	<.10	<.070	.87	--	--	--

14048000 JOHN DAY RIVER AT MCDONALD FERRY, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C)	CARBON, ORGANIC TOTAL (MG/L AS C)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	TURBIDITY (NTU)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT												
15...	.010	.020	6.1	.2	--	<10	177	--	.50	3	2.4	71
NOV												
19...	.020	.030	--	--	4.3	25	159	148	2.9	8	11	90
DEC												
16...	.060	.100	--	--	9.8	28	156	161	6.9	14	26	92
JAN												
13...	.020	.120	3.9	.1	--	28	135	141	5.7	8	21	74
FEB												
10...	.030	.040	--	--	6.6	27	142	149	3.6	4	8.3	92
MAR												
11...	.050	.060	--	--	5.0	31	122	129	9.9	22	128	80
APR												
23...	.040	.120	4.5	.9	--	28	109	88	16	127	1930	63
MAY												
14...	.130	.150	--	--	2.7	28	105	108	3.9	17	117	78
JUN												
03...	.030	.090	--	--	4.1	28	109	99	13	60	654	78
JUL												
01...	.020	.040	2.7	--	--	28	130	137	2.6	8	28	85
29...	.010	.020	--	--	3.1	16	166	--	<1.0	2	1.7	48
SEP												
16...	$.010	.020	--	--	3.2	33	216	219	1.2	2	.44	53

DATE	ARSENIC DISSOLVED (UG/L AS AS)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)
OCT										
15...	1	4	20	100	<1	<1	<10	10	<3	1
JAN										
13...	1	<1	20	<100	3	<1	10	20	<3	1
APR										
23...	1	2	10	<100	<1	<1	10	20	<3	3
JUL										
01...	1	2	70	<100	<1	<1	10	<10	<3	<1

DATE	COPPER, DISSOLVED (UG/L AS CU)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)
OCT									
15...	2	9	<10	130	2	6	2	10	<.1
JAN									
13...	2	7	100	500	<1	3	8	50	<.1
APR									
23...	3	20	60	4500	3	24	3	100	<.1
JUL									
01...	3	5	30	260	5	--	9	10	.5

14048000 JOHN DAY RIVER AT MCDONALD FERRY, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, DISSOLVED (UG/L AS NI)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT 15...	.1	2	2	<1	<1	<1	1	5	10
JAN 13...	--	2	10	<1	<1	<1	<1	10	40
APR 23...	.2	3	9	<1	<1	<1	<1	9	20
JUL 01...	.1	1	1	<1	<1	<1	<1	20	<10

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	ALDRIN, TOTAL (UG/L)	LINDANE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)
NOV 19...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	PCB, TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	METHYL TRITHION, TOTAL (UG/L)
NOV 19...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

14048000 JOHN DAY RIVER AT MCDONALD FERRY, OR--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981

DATE	NOV 19,80	MAR 11,81	MAY 14,81	JUN 3,81	JUL 1,81	SEP 16,81
TIME	0930	0925	0835	0930	0930	0930
TOTAL CELLS/ML	580	170	180	340	4500	20000
DIVERSITY: DIVISION	1.0	0.0	0.4	0.8	0.8	0.2
.CLASS	1.0	0.0	0.4	0.8	0.8	0.2
..ORDER	1.8	2.3	2.3	2.1	1.3	0.2
...FAMILY	2.1	2.3	2.5	2.2	1.3	1.7
....GENUS	2.1	2.5	2.5	2.2	1.3	1.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)												
.BACILLARIOPHYCEAE												
..ACHNANTHALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	13	4	--	-	--	-
....COCCONEIS	--	-	26#	15	13	7	--	-	--	-	--	-
..BACILLARIALES												
...NITZSCHIACEAE												
....NITZSCHIA	90#	16	26#	15	65#	36	150#	46	3300#	74	--	-
..EPITHEMIALES												
...EPITHEMIACEAE												
....EPITHEMIA	--	-	--	-	--	-	--	-	34	1	--	-
..EUPODISCALES												
...COSCINODISCACEAE												
....CYCLOTELLA	13	2	39#	23	39#	21	26	8	470	10	--	-
..FRAGILARIALES												
...FRAGILARIACEAE												
....DIATOMA	39	7	--	-	--	-	--	-	--	-	--	-
....FRAGILARIA	--	-	13	8	--	-	26	8	--	-	--	-
....SYNEDRA	--	-	26#	15	--	-	--	-	--	-	--	-
..NAVICULALES												
...CYMBELLACEAE												
....CYMBELLA	13	2	--	-	13	7	--	-	--	-	--	-
...GOMPHONEMACEAE												
....GOMPHONEMA	--	-	--	-	--	-	13	4	--	-	--	-
...NAVICULACEAE												
....NAVICULA	13	2	39#	23	26	14	26	8	--	-	680	3
..SURIRELLALES												
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	13	7	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...DICTYOSPHAERIACEAE												
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	11000#	54
...HYDRODICTYACEAE												
....PEDIASTRUM	330#	58	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	1500	7
...OOCYSTACEAE												
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	5100#	26
....OOCYSTIS	--	-	--	-	--	-	--	-	270	6	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	26	4	--	-	--	-	77#	23	--	-	1800	9
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	39	7	--	-	--	-	--	-	67	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	13	2	--	-	13	7	--	-	340	7	--	-

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

14048000 JOHN DAY RIVER AT MCDONALD FERRY, OR--Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	329	299	259	210	204	164	254	130	152	196	282	333
2	323	297	252	212	209	166	254	130	148	200	284	336
3	320	293	252	214	208	169	256	126	150	206	286	338
4	318	295	255	214	205	173	259	121	153	214	289	339
5	318	298	260	213	205	175	260	121	155	217	292	340
6	312	301	258	209	207	178	265	125	157	219	294	341
7	313	298	251	206	210	181	263	128	160	221	298	341
8	316	299	237	205	214	181	262	129	162	227	302	343
9	314	295	207	206	222	182	266	135	159	233	305	346
10	306	292	194	206	222	186	257	138	156	235	304	349
11	309	290	190	207	220	191	225	140	155	237	306	351
12	310	287	193	207	224	191	221	142	151	240	308	352
13	310	280	201	209	222	191	216	144	148	234	308	352
14	312	271	213	212	220	196	214	147	148	236	309	353
15	311	259	226	212	209	202	219	152	149	242	311	354
16	312	244	239	212	218	205	224	158	152	249	312	355
17	312	240	258	216	198	207	226	171	154	254	313	355
18	315	242	262	219	197	211	231	170	158	255	315	354
19	320	246	249	221	196	216	225	173	162	259	315	349
20	318	252	242	226	199	214	214	175	161	264	314	348
21	309	257	240	227	199	216	137	178	161	266	317	345
22	312	260	236	233	197	225	119	177	166	272	318	343
23	308	264	232	236	194	232	115	173	167	276	320	339
24	298	273	230	231	168	244	120	172	168	280	321	336
25	294	264	227	220	145	253	134	169	175	282	321	336
26	294	264	215	215	153	256	130	168	179	285	322	333
27	293	264	217	214	157	269	126	168	181	289	324	325
28	296	261	211	209	160	276	127	160	186	286	327	324
29	297	261	202	205	---	272	128	156	191	276	326	327
30	299	261	201	194	---	248	132	155	194	276	328	334
31	299	---	207	195	---	250	---	152	---	279	330	---
MEAN	310	274	230	213	199	210	203	151	162	249	310	342

14048000 JOHN DAY RIVER AT MCDONALD FERRY, OR--Continued

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

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.5	14.5	10.0	9.0	4.0	3.0	6.5	6.5	4.5	3.0	8.0	5.5
2	18.0	14.5	11.5	9.0	5.0	3.5	6.5	6.0	4.0	2.5	8.5	6.0
3	18.5	14.5	11.5	11.0	7.0	5.0	6.5	6.0	3.5	3.5	8.5	6.5
4	18.5	15.5	11.5	10.0	6.5	5.0	6.5	6.0	3.5	3.0	8.0	7.0
5	19.5	16.5	12.0	11.0	5.5	4.5	6.0	5.5	3.5	3.0	8.5	6.0
6	19.5	16.5	12.0	11.5	4.5	2.5	6.0	5.0	3.5	2.5	8.0	6.0
7	19.5	16.5	13.0	11.5	2.5	2.0	5.0	4.5	3.0	2.5	7.5	6.0
8	18.5	16.5	12.0	11.0	2.0	1.5	5.0	4.0	2.5	1.5	8.5	6.0
9	16.5	13.5	11.0	9.5	1.5	1.0	4.5	4.0	2.0	1.5	9.5	7.0
10	14.5	12.5	9.5	8.0	1.5	.5	4.0	3.5	2.0	.0	10.0	7.5
11	14.0	12.0	8.5	7.5	2.0	.5	3.5	3.5	1.5	.5	10.5	8.0
12	14.5	13.0	7.5	6.5	2.5	1.5	3.5	3.5	3.5	1.0	11.0	8.5
13	14.5	13.0	6.5	6.0	2.5	1.5	3.5	3.0	3.0	2.5	12.0	9.5
14	13.5	12.0	6.0	5.0	2.5	1.5	3.0	2.5	6.5	3.0	12.5	9.5
15	12.0	11.5	5.5	5.0	4.0	2.5	2.5	2.0	7.5	6.5	12.0	10.5
16	13.0	10.0	5.0	5.0	3.0	3.0	2.0	1.5	9.0	7.5	11.5	9.5
17	13.0	10.0	5.5	4.0	3.0	2.5	2.0	1.5	8.0	6.5	11.5	8.5
18	13.5	11.0	7.0	5.0	3.0	2.5	2.5	1.5	6.5	6.0	10.0	8.5
19	13.5	11.0	8.0	6.0	3.0	2.5	3.0	2.5	7.0	6.5	9.5	8.5
20	13.0	11.0	7.0	6.5	3.0	2.5	3.0	2.5	6.5	5.5	9.0	8.0
21	13.0	11.0	8.0	6.0	3.5	3.0	3.5	3.0	6.5	6.0	10.0	7.5
22	11.5	8.5	7.5	6.5	6.0	3.0	4.5	3.5	6.5	5.5	11.0	9.0
23	10.0	8.0	6.5	5.0	6.0	5.0	5.0	4.0	7.0	5.5	10.5	9.0
24	9.5	7.5	5.5	4.0	5.5	5.0	5.0	4.0	7.0	6.0	11.0	9.0
25	11.5	8.5	6.0	4.5	8.5	5.5	5.5	3.5	7.0	5.5	11.5	10.0
26	10.0	9.0	5.5	5.0	9.0	8.0	5.5	4.5	7.0	5.5	11.0	9.5
27	11.0	8.5	6.0	4.5	8.0	7.0	4.5	4.0	7.5	5.5	10.5	9.0
28	9.5	8.5	6.0	5.0	7.0	6.0	4.5	4.0	8.0	5.5	10.0	8.5
29	9.0	8.0	6.5	5.5	6.5	6.0	5.0	3.5	---	---	10.0	8.5
30	9.5	9.0	5.5	4.0	6.0	6.0	5.5	4.5	---	---	9.5	8.5
31	9.5	9.0	---	---	6.5	6.0	5.5	3.5	---	---	9.0	8.0
MONTH	19.5	7.5	13.0	4.0	9.0	.5	6.5	1.5	9.0	.0	12.5	5.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.0	7.0	17.5	16.0	19.5	17.5	24.5	19.0	26.0	20.5	22.5	19.0
2	8.5	7.0	17.0	15.0	19.5	17.0	25.0	20.5	24.5	20.0	22.0	17.0
3	9.0	7.5	16.0	14.0	20.0	17.5	26.5	21.5	23.0	18.0	23.5	17.0
4	10.0	7.5	15.0	13.5	19.5	18.0	27.0	22.5	24.0	18.5	22.0	18.0
5	9.5	8.5	14.0	12.5	20.5	17.5	25.0	22.0	26.5	20.0	23.0	17.0
6	9.0	8.0	14.0	12.0	19.5	18.0	22.0	18.0	27.5	22.0	23.5	18.5
7	10.0	7.5	14.5	12.0	18.0	17.0	20.5	16.5	28.5	23.0	24.5	19.0
8	10.0	8.5	15.0	11.5	17.5	16.5	22.5	17.0	29.5	24.0	26.0	20.0
9	10.0	8.0	16.5	12.5	18.5	17.0	22.5	19.0	29.0	25.0	23.5	20.0
10	10.5	8.0	16.5	13.5	18.0	17.0	22.0	18.0	29.5	23.5	23.5	18.0
11	9.5	8.5	17.0	13.5	17.5	16.0	23.0	18.5	29.5	24.0	24.0	18.5
12	10.5	8.5	17.5	13.5	17.5	16.5	23.5	19.5	30.5	25.0	24.5	19.5
13	11.5	8.5	17.0	14.5	17.0	15.5	21.5	18.5	29.0	23.5	24.0	20.0
14	12.5	8.5	16.5	15.0	17.0	15.0	24.0	18.0	28.5	23.5	24.0	18.5
15	13.0	10.5	15.0	13.5	17.5	15.5	26.0	20.5	28.0	22.5	24.0	18.5
16	14.5	11.0	16.5	12.0	17.5	16.5	27.0	22.0	27.0	22.5	24.5	19.0
17	15.5	12.0	15.5	13.5	18.0	16.0	27.0	23.0	27.0	21.0	25.5	19.5
18	16.5	13.0	15.0	14.0	18.0	17.0	25.5	21.0	28.5	22.5	24.5	20.0
19	15.5	14.0	17.5	14.0	19.0	17.5	25.5	20.5	26.0	21.5	21.0	17.5
20	14.5	12.5	17.0	14.0	19.0	17.5	25.5	21.5	23.0	18.5	19.0	16.0
21	14.5	12.5	16.5	14.5	19.5	17.5	24.0	20.0	24.0	18.0	18.0	14.5
22	15.0	13.0	16.5	14.5	19.5	18.5	24.5	19.5	25.5	19.5	17.5	13.0
23	17.0	14.0	17.5	14.5	20.5	17.5	24.0	20.0	27.0	20.5	17.5	12.5
24	15.5	14.0	18.0	16.0	21.5	18.5	26.0	20.0	24.5	19.5	17.0	13.0
25	14.5	12.5	19.0	17.0	23.5	19.5	27.5	22.5	23.0	18.0	16.5	12.0
26	14.0	13.0	19.5	16.5	22.5	20.5	28.5	23.5	22.5	17.5	13.5	12.0
27	13.0	11.0	19.0	17.0	22.0	19.0	30.0	24.5	22.5	17.0	14.0	11.5
28	13.0	11.0	20.0	17.0	23.0	19.5	26.5	22.0	24.0	18.5	17.5	12.0
29	15.5	12.0	21.0	18.0	24.5	20.5	22.5	19.0	21.5	19.0	17.0	13.5
30	18.0	14.5	20.0	18.5	24.0	21.5	24.0	18.0	22.5	18.0	15.5	11.0
31	---	---	20.0	17.0	---	---	25.5	20.5	23.0	17.5	---	---
MONTH	18.0	7.0	21.0	11.5	24.5	15.0	30.0	16.5	30.5	17.0	26.0	11.0

14050000 DESCHUTES RIVER BELOW SNOW CREEK, NEAR LA PINE, OR

LOCATION.--Lat 43°48'51", long 121°46'33", in NW¼ sec.28, T.20 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, in Deschutes National Forest, on left bank at flow line of Crane Prairie Reservoir, 20 ft (6 m) downstream from Snow Creek, 300 ft (91 m) upstream from highway bridge, and 17 mi (27 km) northwest of La Pine.

DRAINAGE AREA.--132 mi² (342 km²), including Sparks, Elk, and Mud Lake basins, which have no surface outflow to Deschutes River; hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only October 1937, published in WSP 1318. Published as "near Lapine" 1937-64.

REVISED RECORDS.--WSP 1248: 1951.

GAGE.--Water-stage recorder. Altitude of gage is 4,445 ft (1,355 m), from elevation of Crane Prairie Reservoir when slack water extended to gage. Prior to Sept. 10, 1938, nonrecording gage at site 450 ft (137 m) downstream at different datum.

REMARKS.--Records good. No regulation. Crater Creek Canal diverts water to Tumalo Creek basin from tributaries of Soda Creek. Stream is spring fed and peak discharge may occur several months after the precipitation which caused it.

AVERAGE DISCHARGE.--44 years, 149 ft³/s (4.220 m³/s), 108,000 acre-ft/yr (133 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 480 ft³/s (13.6 m³/s) Aug. 19, 1974, gage height, 3.17 ft (0.966 m); maximum gage height, 4.12 ft (1.256 m) Jan. 21, 1943 (ice jam); minimum discharge, 40 ft³/s (1.13 m³/s) sometime during period Dec. 22, 1959, to Mar. 2, 1960, result of freezeup; minimum daily, 55 ft³/s (1.56 m³/s) for many days April to June 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 138 ft³/s (3.91 m³/s) Nov. 7, gage height, 1.71 ft (0.521 m); minimum, 85 ft³/s (2.41 m³/s) Feb. 7-10, June 24, 28.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	125	111	99	100	89	96	95	88	90	88	97	103
2	124	111	108	99	88	96	93	88	90	88	98	102
3	124	111	109	99	88	98	93	87	88	90	99	103
4	125	109	108	98	89	98	91	87	88	91	99	103
5	124	109	107	97	89	95	91	88	88	93	99	105
6	123	113	107	96	87	95	91	87	88	93	99	105
7	123	123	103	95	87	95	91	87	89	92	100	105
8	123	118	101	95	87	94	91	87	95	91	102	105
9	121	115	100	94	88	94	91	87	91	91	102	105
10	121	112	99	93	87	95	91	87	91	91	101	103
11	121	111	98	92	88	94	91	87	90	91	102	103
12	123	110	97	92	88	94	93	86	90	92	103	103
13	123	108	96	91	90	94	89	87	91	93	102	103
14	122	108	95	91	92	93	89	89	90	92	102	103
15	121	106	94	91	91	95	89	91	89	93	102	103
16	119	105	94	91	103	95	89	90	90	94	102	103
17	119	104	93	91	96	93	89	90	87	95	101	103
18	117	103	93	91	101	93	89	94	87	95	102	101
19	117	102	92	91	101	94	89	94	88	95	103	101
20	116	101	93	91	95	94	89	92	88	96	102	101
21	115	106	94	91	93	94	89	91	88	96	102	101
22	116	106	96	91	93	94	89	91	89	96	101	99
23	115	105	94	93	94	93	89	91	88	97	103	99
24	115	102	103	91	97	93	89	92	88	97	103	99
25	115	101	111	91	97	96	89	92	88	97	104	97
26	116	100	105	93	97	95	91	91	89	96	104	103
27	115	99	106	91	97	94	89	90	88	96	105	105
28	113	98	103	91	96	93	89	89	88	97	105	101
29	113	100	102	91	---	96	88	90	88	98	105	101
30	111	99	101	91	---	95	88	91	89	97	104	99
31	111	---	101	89	---	95	---	89	---	97	103	---
TOTAL	3686	3206	3102	2881	2588	2933	2704	2770	2671	2908	3156	3067
MEAN	119	107	100	92.9	92.4	94.6	90.1	89.4	89.0	93.8	102	102
MAX	125	123	111	100	103	98	95	94	95	98	105	105
MIN	111	98	92	89	87	93	88	86	87	88	97	97
AC-FT	7310	6360	6150	5710	5130	5820	5360	5490	5300	5770	6260	6080

CAL YR 1980 TOTAL 36352 MEAN 99.3 MAX 136 MIN 82 AC-FT 72100
WTR YR 1981 TOTAL 35672 MEAN 97.7 MAX 125 MIN 86 AC-FT 70760

14050500 CULTUS RIVER ABOVE CULTUS CREEK, NEAR LA PINE, OR

LOCATION.--Lat 43°49'06", long 121°47'40", near line between secs.20 and 29, T.20 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, Deschutes National Forest, on left bank at highway culvert, 2 mi (3 km) upstream from Cultus Creek, and 18 mi (29 km) northwest of La Pine.

DRAINAGE AREA.--16.5 mi^2 (42.7 km^2), hydrologic drainage boundry uncertain owing to ground-water exchange.

PERIOD OF RECORD.--October 1922 to September 1925, October 1937 to current year. Monthly discharge only October 1937, published in WSP 1318. Prior to Oct. 1, 1964, published as "near Lapine."

REVISED RECORDS.--WSP 1448: 1923-25, 1947.

GAGE.--Water-stage recorder and cement bag control. Altitude of gage is 4,450 ft (1,356 m), by barometer. Oct 1, 1922, to Sept. 30, 1925, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum.

REMARKS.--Records good. No regulation or diversions above station.

AVERAGE DISCHARGE.--47 years, 62.3 ft^3/s (1.764 m^3/s), 45,140 acre-ft/yr (55.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 178 ft^3/s (5.04 m^3/s) May 31, 1956, gage height, 1.04 ft (0.317 m); maximum gage height, 1.32 ft (0.402 m) May 16, 1972 (backwater from Crane Prairie Reservoir); minimum discharge, 26 ft^3/s (0.74 m^3/s) May 26-31, Nov. 23 to Dec. 4, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 59 ft^3/s (1.67 m^3/s) Aug. 16-19, 23, 24; maximum gage height, 0.77 ft (0.235 m) Aug. 5-19; minimum daily discharge, 44 ft^3/s (1.25 m^3/s) Dec. 8 to Feb. 14, Sept 28-30.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	50	47	44	44	50	50	50	47	49	52	56
2	52	50	48	44	44	50	50	47	47	49	52	56
3	52	50	47	44	44	50	50	47	49	49	54	54
4	52	50	46	44	44	50	50	47	49	50	54	54
5	52	50	46	44	44	50	49	47	49	49	54	56
6	52	50	46	44	44	50	49	47	49	49	56	54
7	51	51	46	44	44	50	49	47	49	49	56	54
8	50	50	44	44	44	50	49	47	50	49	56	52
9	50	50	44	44	44	50	49	47	49	49	57	52
10	51	50	44	44	44	50	49	47	49	50	57	50
11	51	49	44	44	44	50	49	47	49	50	57	50
12	50	49	44	44	44	50	49	47	50	50	57	49
13	50	49	44	44	44	50	49	47	50	49	57	49
14	50	49	44	44	44	50	49	47	49	49	57	47
15	50	49	44	44	46	50	49	47	49	49	57	47
16	52	49	44	44	46	50	49	47	49	49	59	47
17	52	49	44	44	46	50	47	47	49	50	59	47
18	52	49	44	44	46	50	47	49	49	50	59	49
19	52	49	44	44	48	50	47	49	50	50	57	47
20	52	48	44	44	48	50	47	49	50	49	57	47
21	51	49	44	44	48	50	47	47	49	49	57	47
22	50	49	44	44	48	50	47	47	49	49	57	47
23	50	49	44	44	50	50	49	47	49	49	59	46
24	50	47	44	44	50	50	49	49	49	50	59	46
25	51	47	44	44	50	50	49	49	49	50	57	46
26	50	47	44	44	50	50	49	49	49	50	57	46
27	50	47	44	44	50	50	49	49	49	52	56	46
28	50	47	44	44	50	50	47	49	47	52	56	44
29	50	47	44	44	---	50	47	49	47	52	57	44
30	50	47	44	44	---	50	47	47	47	52	57	44
31	50	---	44	44	---	50	---	47	---	52	56	---
TOTAL	1577	1466	1382	1364	1292	1550	1456	1478	1465	1544	1752	1473
MEAN	50.9	48.9	44.6	44.0	46.1	50.0	48.5	47.7	48.8	49.8	56.5	49.1
MAX	52	51	48	44	50	50	50	50	50	52	59	56
MIN	50	47	44	44	44	50	47	47	47	49	52	44
AC-FT	3130	2910	2740	2710	2560	3070	2890	2930	2910	3060	3480	2920

CAL YR 1980 TOTAL 17804 MEAN 48.6 MAX 57 MIN 40 AC-FT 35310
WTR YR 1981 TOTAL 17799 MEAN 48.8 MAX 59 MIN 44 AC-FT 35300

NOTE.--No gage-height record Dec. 9 to Jan. 13, Jan. 25 to Feb. 24, Mar. 1-30.

14051000 CULTUS CREEK ABOVE CRANE PRAIRIE RESERVOIR, NEAR LA PINE, OR

LOCATION.--Lat 43°49'17", long 121°49'22", in SW¼ sec.19, T.20 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, on left bank 1,000 ft (305 m) upstream from highway bridge, 1.0 mi (1.6 km) downstream from Cultus Lake, and 19 mi (31 km) northwest of La Pine.

DRAINAGE AREA.--33.2 mi² (86.0 km²), hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--March to September 1924 (published as "above Crane Prairie, near Lapine"), October 1937 to current year. Monthly discharge only October 1937 to September 1949, published in WSP 1318. Records for October 1923 to February 1924, published in WSP 594, have been found to be unreliable and should not be used. Published as "near Lapine" 1937-64.

REVISED RECORDS.--WSP 1568: 1957. WRD Oreg. 1973: 1972. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Altitude of gage is 4,545 ft (1,385 m), by barometer. Mar. 1 to Sept. 30, 1924, nonrecording gage at site 100 ft (30 m) upstream at different datum.

REMARKS.--Records good. Some regulation by fish screens at Cultus Lake since 1962. No diversion above station.

AVERAGE DISCHARGE.--44 years (water years 1938-81), 22.3 ft³/s (0.632 m³/s), 16,160 acre-ft/yr (19.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 336 ft³/s (9.52 m³/s) Dec. 25, 1964, gage height, 4.15 ft (1.265 m), from floodmark, from rating curve extended above 90 ft³/s (2.55 m³/s); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 54 ft³/s (1.53 m³/s) Dec. 30, gage height, 2.08 ft (0.634 m); no flow Oct. 1 to Nov. 6, Nov. 8-20, Sept. 10-30.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	1.3	50	18	36	20	19	26	21	7.9	1.1
2	.00	.00	5.3	49	17	35	20	19	25	20	7.9	.92
3	.00	.00	5.0	48	17	34	19	20	25	20	7.1	.82
4	.00	.00	6.2	47	17	32	19	20	25	20	7.1	.72
5	.00	.00	7.4	45	16	30	19	20	25	20	6.7	.58
6	.00	.00	8.1	44	16	29	18	21	25	20	6.7	.37
7	.00	.11	8.3	42	15	29	17	21	25	19	6.7	.28
8	.00	.00	8.3	40	15	29	17	21	26	19	6.4	.26
9	.00	.00	8.3	39	15	28	17	21	29	18	6.1	.18
10	.00	.00	8.3	37	15	27	17	21	31	17	5.9	.00
11	.00	.00	7.8	36	15	27	16	21	31	16	5.9	.00
12	.00	.00	7.4	35	15	27	16	21	30	16	5.5	.00
13	.00	.00	7.0	32	15	26	16	21	30	15	5.1	.00
14	.00	.00	6.6	32	17	25	16	21	29	15	4.8	.00
15	.00	.00	6.4	31	17	25	16	21	29	15	4.5	.00
16	.00	.00	6.2	30	20	25	16	22	29	15	4.2	.00
17	.00	.00	6.0	29	23	24	15	22	28	14	3.9	.00
18	.00	.00	5.8	28	27	23	15	23	27	13	3.7	.00
19	.00	.00	5.8	27	32	23	15	23	27	13	3.5	.00
20	.00	.00	6.2	26	33	23	15	24	26	13	3.0	.00
21	.00	.16	7.0	25	34	23	14	24	26	12	2.8	.00
22	.00	.28	8.9	24	36	23	14	25	25	11	2.7	.00
23	.00	.42	10	22	37	22	14	25	25	11	2.6	.00
24	.00	.52	13	20	38	22	15	26	25	11	2.3	.00
25	.00	.50	22	19	37	22	15	27	24	11	2.2	.00
26	.00	.50	33	20	37	22	16	27	23	10	2.0	.00
27	.00	.51	41	20	36	21	16	28	22	10	1.8	.00
28	.00	.65	45	20	36	20	17	28	23	9.7	1.6	.00
29	.00	.94	51	20	---	20	17	28	23	8.8	1.5	.00
30	.00	1.1	53	20	---	20	18	26	22	8.8	1.3	.00
31	.00	---	52	18	---	20	---	26	---	8.3	1.2	---
TOTAL	.00	5.69	467.6	975	666	792	495	712	786	450.6	134.6	5.23
MEAN	.000	.19	15.1	31.5	23.8	25.5	16.5	23.0	26.2	14.5	4.34	.17
MAX	.00	1.1	53	50	38	36	20	28	31	21	7.9	1.1
MIN	.00	.00	1.3	18	15	20	14	19	22	8.3	1.2	.00
AC-FT	.00	11	927	1930	1320	1570	982	1410	1560	894	267	10

CAL YR 1980 TOTAL 5675.76 MEAN 15.5 MAX 54 MIN .00 AC-FT 11260
WTR YR 1981 TOTAL 5489.72 MEAN 15.0 MAX 53 MIN .00 AC-FT 10890

14052000 DEER CREEK ABOVE CRANE PRAIRIE RESERVOIR, NEAR LA PINE, OR

LOCATION.--Lat 43°48'48", long 121°50'18", in SE¼SW¼ sec.25, T.20 S., R.7 E., Deschutes County, Hydrologic Unit 17070301, on right bank 150 ft (46 m) downstream from highway bridge, 1.2 mi (1.9 km) downstream from Little Cultus Lake, and 19 mi (31 km) northwest of La Pine.

DRAINAGE AREA.--21.5 mi² (55.7 km²), hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--February to September 1924 (published as "above Crane Prairie, near Lapine"). October 1937 to current year. Monthly discharge only October 1937 to September 1949, published in WSP 1318. Records for October 1923 to January 1924, published in WSP 594, have been found to be unreliable and should not be used. Published as "near Lapine" 1937-64.

REVISED RECORDS.--See PERIOD OF RECORD.

GAGE.--Water-stage recorder and sharp-crested weir control. Altitude of gage is 4,520 ft (1,378 m), by barometer. Feb. 1 to Sept. 30, 1924, nonrecording gage at site 75 ft (23 m) upstream at various datums. Oct. 1, 1937, to Sept. 30, 1938, water-stage recorder at bridge 150 ft (46 m) upstream at different datum. Oct. 1, 1938, to Aug. 13, 1968, water-stage recorder and wooden weir control at present site and datum 0.60 ft (0.183 m) higher.

REMARKS.--Records good except those for July to September, which are poor. No regulation or diversion above station.

AVERAGE DISCHARGE.--44 years (water years 1938-81), 7.36 ft³/s (0.208 m³/s), 5,330 acre-ft/yr (6.57 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 200 ft³/s (5.66 m³/s), estimated, Dec. 25, 1964; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40 ft³/s (1.13 m³/s) Feb. 19, gage height, 2.31 ft (0.704 m); no flow Aug. 8, Aug. 30 to Sept. 1, Sept. 5-17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.18	.26	16	3.7	12	7.0	14	4.1	1.4	.09	.00
2	.12	.20	.60	14	3.3	11	6.7	14	3.5	1.3	.18	.06
3	.12	.18	2.7	12	3.0	9.7	6.2	14	3.2	1.2	.09	.02
4	.15	.18	3.5	11	2.7	9.2	6.2	13	2.9	1.0	.12	.02
5	.15	.15	3.9	10	2.4	8.5	6.0	13	2.7	1.1	.12	.00
6	.15	.23	4.8	9.0	2.3	8.0	5.8	13	2.7	1.1	.09	.00
7	.15	.53	4.8	8.1	2.2	7.5	5.6	12	2.7	1.1	.06	.00
8	.15	.48	3.7	7.2	2.1	6.7	5.2	11	4.6	1.1	.00	.00
9	.15	.32	3.0	6.3	2.0	6.5	5.4	11	6.7	1.2	.03	.00
10	.15	.25	2.5	5.6	2.0	6.0	5.6	9.7	7.5	1.1	.04	.00
11	.15	.22	2.0	5.0	2.0	5.8	5.4	8.5	8.0	.96	.06	.00
12	.18	.20	1.8	4.5	2.0	5.5	5.6	7.8	8.0	.88	.09	.00
13	.20	.18	1.6	4.0	2.1	5.4	5.8	7.0	8.0	.80	.15	.00
14	.18	.18	1.5	3.7	2.7	5.2	5.6	6.2	8.5	.75	.09	.00
15	.16	.18	1.4	3.4	3.3	5.0	5.4	6.2	8.0	.70	.02	.00
16	.15	.18	1.4	3.2	8.6	5.2	5.2	6.7	7.2	.65	.04	.00
17	.15	.18	1.4	3.0	15	5.0	5.2	6.7	6.2	.65	.04	.00
18	.15	.18	1.4	2.9	22	4.9	5.2	7.2	5.6	.60	.02	.06
19	.15	.18	1.4	2.8	35	5.1	5.2	8.0	5.2	.45	.02	.01
20	.15	.18	1.4	2.8	38	5.4	5.8	8.5	4.6	.18	.02	.03
21	.18	.21	1.7	2.9	32	5.3	6.2	8.5	4.2	.09	.06	.03
22	.18	.40	3.2	3.1	26	5.6	7.0	8.0	3.8	.12	.12	.06
23	.18	.30	3.7	3.2	22	5.6	8.3	7.5	3.3	.09	.12	.06
24	.18	.25	6.5	3.3	20	5.3	9.4	7.2	3.0	.06	.12	.03
25	.18	.25	15	3.4	18	5.5	11	7.5	2.7	.03	.21	.03
26	.20	.23	24	3.6	16	6.0	13	7.5	2.6	.06	.21	.08
27	.18	.21	32	4.1	14	5.9	14	7.2	2.3	.03	.18	.14
28	.18	.22	31	4.7	13	5.4	15	6.5	1.9	.03	.12	.13
29	.16	.26	26	5.0	---	5.7	15	5.8	1.7	.09	.05	.12
30	.15	.27	22	4.6	---	6.2	14	5.2	1.5	.15	.00	.09
31	.15	---	19	4.0	---	6.7	---	4.4	---	.24	.00	---
TOTAL	4.96	7.16	229.16	176.4	317.4	200.8	227.0	272.8	136.9	19.21	2.56	.97
MEAN	.16	.24	7.39	5.69	11.3	6.48	7.57	8.80	4.56	.62	.083	.032
MAX	.20	.53	32	16	38	12	15	14	8.5	1.4	.21	.14
MIN	.12	.15	.26	2.8	2.0	4.9	5.2	4.4	1.5	.03	.00	.00
AC-FT	9.8	14	455	350	630	398	450	541	272	38	5.1	1.9

CAL YR 1980 TOTAL 2048.29 MEAN 5.60 MAX 43 MIN .03 AC-FT 4060
WTR YR 1981 TOTAL 1595.32 MEAN 4.37 MAX 38 MIN .00 AC-FT 3160

14052500 QUINN RIVER NEAR LA PINE, OR

LOCATION.--Lat 43°47'03", long 121°50'06", in SW¼NW¼ sec.1, T.21 S., R.7 E., Deschutes County, Hydrologic Unit 17070302, Deschutes National Forest, on left bank at flow line of Crane Prairie Reservoir, 150 ft (46 m) downstream from springs at head of river, and 18 mi ((29 km) northwest of La Pine.

DRAINAGE AREA.--Indeterminate, normal flow is entirely from springs 150 ft (46 m) upstream.

PERIOD OF RECORD.--June 1922 to September 1925, October 1937 to current year. Published as "above Crane Prairie Reservoir near Lapine" 1922-25, and as "near Lapine" 1937-64. Monthly discharge only October 1937, published in WSP 1318.

REVISED RECORDS.--WSP 1448: 1939, 1941.

GAGE.--Water-stage recorder and log control. Datum of gage is 4,442.1 ft (1,353.95 m) National Geodetic Vertical Datum of 1929, based on elevation of Crane Prairie Reservoir when slack water reached station. June 1, 1922, to Sept. 30, 1925, nonrecording gage at site 150 ft (46 m) downstream at different datum.

REMARKS.--Records excellent. No regulation or diversion above station.

AVERAGE DISCHARGE.--47 years, 23.7 ft^3/s (0.671 m^3/s), 17,170 acre-ft/yr (21.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59 ft^3/s (1.67 m^3/s) July 4, 1949, gage height, 1.97 ft (0.600 m); maximum gage height, 3.92 ft (1.195 m) June 25, 1943 (backwater from Crane Prairie Reservoir); practically no flow Nov. 14, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20 ft^3/s (0.57 m^3/s) Apr. 23-28, May 1, June 22; maximum gage height, 1.67 ft (0.509 m) Apr. 23-26; minimum discharge, 8.2 ft^3/s (0.23 m^3/s) Dec. 18-22.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	10	9.6	10	12	15	16	20	19	18	17	15
2	14	9.6	10	10	12	15	16	19	19	18	17	14
3	14	9.6	9.6	10	12	16	16	19	19	18	16	14
4	14	10	8.9	10	12	15	17	19	19	18	16	14
5	13	10	9.6	10	12	15	18	19	19	18	16	14
6	13	9.6	9.6	11	12	16	18	19	19	18	16	14
7	13	10	8.9	11	12	15	18	19	19	17	16	14
8	13	10	9.6	10	12	15	18	18	19	18	17	14
9	13	10	9.6	10	12	15	18	19	19	18	16	14
10	12	10	9.6	10	12	15	18	19	19	17	16	14
11	12	9.6	9.6	10	12	16	18	19	19	17	16	13
12	12	9.6	9.6	11	12	16	17	19	19	18	17	13
13	12	9.6	8.9	11	12	16	18	19	19	17	16	13
14	11	9.6	8.9	14	12	16	19	19	19	17	16	13
15	12	9.6	8.9	10	12	16	19	19	19	17	16	13
16	11	9.6	8.9	10	13	16	19	18	19	17	16	13
17	11	10	8.9	10	13	16	19	19	19	17	16	13
18	11	10	8.9	10	13	16	19	19	19	17	16	13
19	11	10	8.9	10	14	16	19	19	19	17	16	12
20	11	10	8.9	10	13	16	19	19	19	17	16	12
21	11	10	8.9	10	14	16	19	19	19	17	16	12
22	10	9.6	8.2	11	15	16	19	19	20	17	16	12
23	10	9.6	9.6	10	16	16	20	19	19	17	15	12
24	10	9.6	9.6	10	15	16	20	19	19	17	15	12
25	11	9.6	9.6	11	15	16	20	19	19	17	15	12
26	10	9.6	10	11	15	16	20	19	19	17	15	12
27	9.6	9.6	9.6	12	15	16	20	19	19	17	15	12
28	10	10	9.6	11	15	16	20	19	19	17	15	11
29	10	9.6	10	11	---	16	19	19	19	17	15	11
30	10	9.6	10	11	---	17	19	19	19	17	14	11
31	10	---	11	12	---	16	---	19	---	17	14	---
TOTAL	359.6	293.2	291.5	328	366	489	555	588	571	536	489	386
MEAN	11.6	9.77	9.40	10.6	13.1	15.8	18.5	19.0	19.0	17.3	15.8	12.9
MAX	15	10	11	14	16	17	20	20	20	18	17	15
MIN	9.6	9.6	8.2	10	12	15	16	18	19	17	14	11
AC-FT	713	582	578	651	726	970	1100	1170	1130	1060	970	766

CAL YR 1980 TOTAL 5604.0 MEAN 15.3 MAX 24 MIN 7.4 AC-FT 11120
WTR YR 1981 TOTAL 5252.3 MEAN 14.4 MAX 20 MIN 8.2 AC-FT 10420

14053500 CRANE PRAIRIE RESERVOIR NEAR LA PINE, OR

LOCATION.--Lat 43°45'20", long 121°47'00", in SW¼NW¼ sec.16, T.21 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, in Deschutes National Forest, on control structure at Crane Prairie Dam on Deschutes River, 15.0 mi (24.1 km) northwest of La Pine, and at mile 238.3 (383.4 km).

DRAINAGE AREA.--254 mi^2 (658 km^2), hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--November 1922 to November 1935, April to December 1936, April 1937 to current year. Prior to Oct. 1, 1964, published as "near Lapine."

REVISED RECORDS.--WSP 1218: Drainage area. WSP 1318: 1925, 1940-41, 1950. WSP 1448: 1925(M,m), 1940(m), 1950(m).

GAGE.--Water-stage recorder. Datum of gage is 4,400.0 ft (1,341.120 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation); gage readings have been reduced to elevations NGVD. Prior to July 13, 1940, nonrecording gage, at site 150 ft (45.7 m) upstream at same datum. July 13, 1940, to Sept. 15, 1966, nonrecording gage, at present site and datum.

REMARKS.--Reservoir originally formed by earthfill dam completed in 1922, reconstructed as rock-faced, earthfill dam in 1940. Capacity, 55,340 acre-ft (68.2 hm^3) between elevation 4,424.0 ft (1,348.44 m) lip of fish-screen structure and 4,445.0 ft (1,354.84 m) crest of spillway. Some dead storage in isolated pools in reservoir at stages below 4,428 ft (1,349.7 m) and natural flow passing through reservoir when outlet gates are open prevents withdrawal of remaining storage to elevation of sill of gates. Crater Creek Canal diverts water to Tumalo Creek basin from tributaries of Soda Creek above station. Released water diverted from Deschutes River near Bend for irrigation near Bend and Redmond.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 60,500 acre-ft (74.6 hm^3) June 5-7, 1943, elevation, 4,446.0 ft (1,355.14 m); no usable contents at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 32,620 acre-ft (40.2 hm^3) Apr. 14, 20, elevation, 4,439.99 ft (1,353.309 m); minimum, 6,770 acre-ft (8.35 hm^3) Oct. 11, elevation, 4,432.51 ft (1,351.029 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	4,433.49	9,470	-
Oct. 31	4,433.92	10,720	+1,250
Nov. 30	4,436.19	18,150	+7,430
Dec. 31	4,438.35	26,090	+7,940
CAL YR 1980	-	-	+8,400
Jan. 31	-	a29,840	+3,750
Feb. 28	4,439.69	31,400	+1,560
Mar. 31	4,439.95	32,460	+1,060
Apr. 30	4,439.66	31,280	-1,180
May 31	4,437.22	21,830	-9,450
June 30	4,436.00	17,480	-4,350
July 31	4,435.77	16,700	-780
Aug. 31	4,435.55	15,960	-740
Sept.30	4,434.10	11,260	-4,700
WTR YR 1981	-	-	+1,790

a Contents interpolated.

14054000 DESCHUTES RIVER BELOW CRANE PRAIRIE RESERVOIR, NEAR LA PINE, OR

LOCATION.--Lat 43°45'13", long 121°46'57", in SW¼NW¼ sec.16, T.21 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, Deschutes National Forest, on left bank 0.1 mi (0.2 km) downstream from Crane Prairie Dam, 15 mi (24 km) northwest of La Pine, and at mile 238.2 (383.3 km).

DRAINAGE AREA.--254 mi² (658 km²), hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--August 1907 to November 1908 and August 1912 to September 1913 (fragmentary), October 1913 to September 1917, February 1922 to current year. Monthly discharge only for some periods, published in WSP 1318. Prior to October 1949, published as "at Crane Prairie, near Lapine." Published as "near Lapine" 1949-64.

REVISED RECORDS.--WSP 1218: Drainage area. WSP 1318: 1929(M).

GAGE.--Water-stage recorder. Datum of gage is 4,419.78 ft (1,347.149 m) National Geodetic Vertical Datum of 1929 (Pacific Power & Light Co. bench mark). Aug. 15, 1907, to Sept. 30, 1917, and Feb. 23 to June 8, 1922, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datums. June 9, 1922, to May 9, 1932, nonrecording gage or water-stage recorder at present site and datum.

REMARKS.--Records excellent except those for February and March, which are good. Flow regulated since 1922 by Crane Prairie Reservoir (see station 14053500). No diversion above station.

AVERAGE DISCHARGE.--63 years, 211 ft³/s (5.976 m³/s), 152,900 acre-ft/yr (189 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,170 ft³/s (33.1 m³/s) July 28, 1947, gage height, 3.34 ft (1.018 m); no flow Nov. 15, 1978, when gates in Crane Prairie Dam were closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 481 ft³/s (13.6 m³/s) June 2, gage height, 2.07 ft (0.631 m); minimum, 58 ft³/s (1.64 m³/s) Oct. 16.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	319	63	61	65	137	148	148	202	463	165	146	154
2	319	63	65	65	137	148	148	202	463	162	146	154
3	319	63	65	65	137	148	148	202	472	162	143	154
4	316	63	65	65	137	148	148	202	463	162	143	154
5	316	63	65	65	137	148	148	202	450	160	143	154
6	312	63	63	65	137	148	148	202	434	160	143	157
7	312	65	63	65	137	148	148	202	414	160	143	157
8	312	65	63	65	137	148	148	202	302	160	143	157
9	312	65	63	65	137	148	148	202	215	160	143	157
10	323	63	61	67	137	148	148	202	215	157	143	157
11	241	63	61	100	137	148	148	199	218	157	140	157
12	202	63	61	143	137	148	148	199	218	157	143	157
13	202	63	61	143	137	148	148	298	218	153	143	157
14	202	63	61	143	139	148	148	378	218	150	143	157
15	202	63	61	143	140	148	148	374	218	150	143	157
16	127	63	61	143	142	148	148	374	218	150	143	157
17	61	63	61	143	144	148	148	370	218	148	143	291
18	61	63	61	143	146	148	148	370	222	145	146	370
19	61	63	61	143	147	148	148	370	196	145	146	370
20	61	63	63	135	148	148	174	366	168	145	148	370
21	61	65	63	135	148	148	202	366	168	142	154	370
22	61	65	67	135	148	148	202	366	168	140	143	370
23	61	65	68	135	148	148	202	362	168	140	151	370
24	61	65	72	137	148	148	202	362	168	140	154	370
25	61	65	80	137	148	148	202	366	168	140	154	370
26	61	61	80	137	148	148	202	370	165	143	154	370
27	61	61	78	137	148	148	202	370	165	143	154	370
28	61	61	74	137	148	148	202	402	165	143	154	267
29	61	61	67	137	---	148	202	472	165	143	154	168
30	61	61	65	137	---	148	202	468	165	143	154	168
31	61	---	65	137	---	148	---	463	---	143	154	---
TOTAL	5251	1896	2025	3532	3971	4588	5006	9685	7668	4668	4554	7091
MEAN	169	63.2	65.3	114	142	148	167	312	256	151	147	236
MAX	323	65	80	143	148	148	202	472	472	165	154	370
MIN	61	61	61	65	137	148	148	199	165	140	140	154
AC-FT	10420	3760	4020	7010	7880	9100	9930	19210	15210	9260	9030	14060

CAL YR 1980 TOTAL 59668 MEAN 163 MAX 332 MIN 42 AC-FT 118400
WTR YR 1981 TOTAL 59935 MEAN 164 MAX 472 MIN 61 AC-FT 118900

NOTE.--No gage-height record Jan. 24 to Mar. 30.

14054500 BROWN CREEK NEAR LA PINE, OR

LOCATION.--Lat 43°42'57", long 121°48'10", in NE¼SW¼ sec.29, T.21 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, in Deschutes National Forest, on right bank at highway crossing and 15 mi (24 km) northwest of La Pine.

DRAINAGE AREA.--21 mi² (54 km²), approximately, hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--May 1922 to September 1925, July 1938 to current year. Monthly discharge only July 1938 to September 1949, published in WSP 1318. Prior to Oct. 1, 1964, published as "near Lapine."

REVISED RECORDS.--WSP 1448: 1922-24. WDR OR-78-1: 1977.

GAGE.--Water-stage recorder. Altitude of gage is 4,370 ft (1,332 m), from topographic map. May 24, 1922, to Sept. 30, 1925, nonrecording gage, and July 1, 1938, to Nov. 1, 1945, water-stage recorder at site 0.4 mi (0.6 km) downstream at different datums. Nov. 2, 1945, to Aug. 25, 1971, water-stage recorder at site 0.8 mi (1.3 km) upstream at datum of 4,372.94 ft (1,332.872 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No regulation. No diversion above station.

AVERAGE DISCHARGE.--46 years, 38.3 ft³/s (1.085 m³/s), 27,750 acre-ft/yr (34.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 104 ft³/s (2.95 m³/s) Aug. 4, 1956, gage height, 1.64 ft (0.500 m); maximum gage height, 3.50 ft (1.067 m) Jan. 30, 1980, backwater from ice; minimum discharge, 16 ft³/s (0.453 m³/s) July 22-25, 1941, and at times December 1941 to March 1942.

EXTREMES FOR CURRENT YEAR.--Maximum recorded discharge, 42 ft³/s (1.19 m³/s) Nov. 7, gage height, 0.61 ft (0.186 m); minimum recorded, 24 ft³/s (0.68 m³/s) Apr. 1-9, May 2-6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	29	30	27	28	28	24	25	26	26	27	27
2	29	30	32	27	28	28	24	25	26	26	27	27
3	28	31	34	27	28	28	24	24	26	26	27	27
4	28	31	31	27	28	28	24	25	26	26	27	28
5	29	31	31	27	28	28	24	25	26	27	27	27
6	29	31	30	27	28	28	24	24	27	27	27	27
7	29	35	30	27	28	28	24	25	27	27	27	27
8	29	32	30	27	28	28	24	25	26	27	28	27
9	29	31	30	27	28	28	24	25	26	27	28	27
10	29	31	30	27	28	27	24	25	26	27	28	27
11	29	31	30	27	28	27	24	25	26	26	28	27
12	29	31	30	27	28	27	24	25	26	26	28	27
13	29	31	30	27	28	27	24	25	26	26	28	27
14	30	31	30	27	28	27	24	25	26	26	28	27
15	30	31	30	27	28	26	24	25	26	26	28	27
16	30	31	30	27	28	27	24	25	26	26	28	27
17	30	30	30	27	28	27	24	26	26	26	28	27
18	30	30	30	28	28	26	24	26	26	26	28	28
19	30	30	30	28	28	26	25	27	26	26	28	28
20	30	30	30	28	31	26	25	27	26	27	28	28
21	30	31	30	28	30	26	25	26	26	27	28	28
22	30	31	30	28	28	26	25	26	26	27	28	28
23	29	31	30	28	28	26	25	26	26	27	28	27
24	30	30	30	28	28	26	25	26	26	27	28	27
25	30	30	30	28	28	26	25	25	26	27	28	27
26	30	30	32	28	28	26	25	25	26	27	28	27
27	30	30	35	29	28	26	25	25	26	27	28	28
28	29	29	33	31	28	26	25	25	26	27	27	27
29	29	30	31	30	---	26	25	26	26	27	27	27
30	29	30	29	29	---	25	25	26	26	27	27	27
31	29	---	27	28	---	25	---	26	---	27	27	---
TOTAL	910	920	945	858	789	829	732	786	782	824	857	817
MEAN	29.4	30.7	30.5	27.7	28.2	26.7	24.4	25.4	26.1	26.6	27.6	27.2
MAX	30	35	35	31	31	28	25	27	27	27	28	28
MIN	28	29	27	27	28	25	24	24	26	26	27	27
AC-FT	1800	1820	1870	1700	1560	1640	1450	1560	1550	1630	1700	1620

CAL YR 1980 TOTAL 10079 MEAN 27.5 MAX 35 MIN 22 AC-FT 19990
WTR YR 1981 TOTAL 10049 MEAN 27.5 MAX 35 MIN 24 AC-FT 19930

NOTE.--No gage-height record Dec. 10 to Jan. 13, Jan. 23 to Feb. 24.

14056000 WICKIUP RESERVOIR NEAR LA PINE, OR

LOCATION.--Lat 43°41'02", long 121°41'20", in SW¼NE¼ sec. 7, T.22 S., R.9 E., Deschutes County, Hydrologic Unit 17070301, in Deschutes National Forest, in gate-chamber structure at Wickiup Dam on Deschutes River, 9.0 mi (14.5 km) west of La Pine, and at mile 226.8 (364.9 km).

DRAINAGE AREA.--482 mi² (1,250 km²), hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--December 1942 to current year. Prior to Oct. 1, 1964, published as "near Lapine."

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Jan. 15, 1945, nonrecording gage at nearby sites at same datum.

REMARKS.--Reservoir is formed by rock-faced, earthfill dam completed in 1949. Some storage began in December 1942, capacity, 182,100 acre-ft (225 hm³) between elevations 4,265.0 ft (1,299.97 m), no storage, and 4,336.0 ft (1,321.61 m) crest of spillway, with earth plug to elevation 4,339.0 ft (1,322.53 m). Crater Creek Canal diverts water above station to Tumalo Creek basin. Released water is diverted from Deschutes River at Bend for irrigation near Madras.

COOPERATION.--Daily elevations furnished by North Unit Irrigation District, and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 204,000 acre-ft (252 hm³) Apr. 8,1974, elevation, 4,338.01 ft (1,322.225 m); minimum observed since reservoir first filled in March 1949, 534 acre-ft (0.66 hm³), revised on basis of computer expanded capacity table dated June 1970, Oct. 18, 1952, elevation, 4,270.86 ft (1,301.758 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 189,200 acre-ft (233 hm³) Apr. 17, elevation, 4,336.67 ft (1,321.817 m); minimum observed, 21,280 acre-ft (26.2 hm³) Sept. 26, elevation, 4,295.40 ft (1,309.238 m).

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

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	4,300.29	29,000	-
Oct. 31	4,311.15	51,390	+22,390
Nov. 30	4,321.24	80,410	+29,020
Dec. 31	4,326.95	107,400	+26,990
CAL YR 1980	-	-	-2,300
Jan. 31	4,330.57	132,500	+25,100
Feb. 28	4,333.37	156,300	+23,800
Mar. 31	4,335.74	179,400	+23,100
Apr. 30	4,335.95	181,600	+2,200
May 31	4,333.78	160,100	-21,500
June 30	4,329.33	123,100	-37,000
July 31	4,320.67	78,440	-44,660
Aug. 31	4,308.73	45,840	-32,600
Sept.30	4,296.34	22,660	-23,180
WTR YR 1981	-	-	-6,340

14056500 DESCHUTES RIVER BELOW WICKIUP RESERVOIR, NEAR LA PINE, OR

LOCATION.--Lat 43°41'10", long 121°41'13", in NW¼NE¼ sec.7, T.22 S., R.9 E., Deschutes County, Hydrologic Unit 17070301, on left bank 1,000 ft (305 m) downstream from Wickiup Dam, 9 mi (14 km) west of La Pine, and at mile 226.4 (364.3 km).

DRAINAGE AREA.--483 mi² (1,251 km²), hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--June 1938 to current year. Monthly discharge only June 1938, published in WSP 1318. Published as "near Lapine" 1938-64.

REVISED RECORDS.--WSP 1448: 1944(m), 1947-51(m).

GAGE.--Water-stage recorder. Datum of gage is 4,257.41 ft (1,297.659 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Records good. Flow regulated by Crane Prairie Reservoir (see station 14053500), and since 1942 by Wickiup Reservoir (see station 14056500). Some leakage from Crane Prairie and Wickiup Reservoirs does not pass station. Some spill bypassed station in 1955. Crater Creek canal diverts water above station to Tumalo Creek basin.

AVERAGE DISCHARGE.--43 years, 741 ft³/s (20.99 m³/s), 536,900 acre-ft/yr (662 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,280 ft³/s (64.6 m³/s) July 28 to Aug. 1, 1956, July 31, Aug. 1, 2, 1962; minimum, 1.9 ft³/s (0.054 m³/s) Nov. 10, 1973; minimum daily, 10 ft³/s (0.28 m³/s) Jan. 17, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,610 ft³/s (45.6 m³/s) June 4, 5, July 20, 21, 26; maximum gage height, 6.38 ft (1.945 m) Sept. 12; minimum discharge, 19 ft³/s (0.54 m³/s) Dec. 12-14, Feb. 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	684	38	25	23	27	21	29	1130	1280	1550	1400	1490
2	670	39	27	24	27	22	29	1130	1500	1570	1400	1490
3	624	39	27	24	27	22	29	1120	1520	1510	1390	1480
4	627	39	27	23	28	22	29	1120	1610	1460	1390	1490
5	630	39	27	23	25	22	30	1120	1590	1550	1410	1480
6	626	39	28	23	25	22	30	1120	1520	1480	1380	1480
7	626	38	28	23	27	22	30	1110	1430	1280	1390	1480
8	654	36	28	23	28	22	31	1080	1160	1190	1400	1480
9	703	36	28	23	28	22	32	1080	941	1200	1400	1480
10	697	36	29	23	28	23	77	1080	948	1250	1390	1480
11	700	36	29	24	28	23	150	1080	948	1270	1400	1480
12	698	36	24	24	29	23	166	1090	952	1290	1410	1480
13	699	36	19	24	29	23	213	1190	952	1410	1410	1480
14	586	37	20	24	28	24	227	1240	955	1440	1400	1480
15	245	37	20	24	29	24	230	1210	992	1480	1380	1460
16	256	38	22	24	31	24	245	1120	1140	1580	1360	1440
17	124	38	20	24	29	24	446	1120	1340	1520	1350	1440
18	58	29	22	24	29	25	661	924	1510	1520	1350	1440
19	59	22	20	24	28	25	675	661	1500	1530	1370	1400
20	41	22	22	24	27	25	675	630	1500	1610	1360	1360
21	37	22	22	25	29	26	672	724	1500	1610	1340	1310
22	38	23	22	25	29	26	675	861	1500	1600	1340	1220
23	39	24	22	25	29	26	693	962	1500	1600	1340	1120
24	39	24	23	25	26	26	847	962	1490	1600	1340	1030
25	40	23	22	27	24	26	984	927	1510	1600	1340	980
26	40	24	20	25	24	27	980	910	1520	1610	1340	980
27	38	24	20	25	23	27	962	927	1520	1600	1330	857
28	36	25	20	24	22	27	910	962	1520	1600	1330	630
29	37	24	22	27	---	27	996	1060	1530	1570	1380	584
30	38	25	23	27	---	27	1120	1100	1550	1500	1410	602
31	38	---	23	27	---	27	---	1100	---	1430	1440	---
TOTAL	10427	948	731	754	763	752	12873	31850	40428	46010	42670	38603
MEAN	336	31.6	23.6	24.3	27.3	24.3	429	1027	1348	1484	1376	1287
MAX	703	39	29	27	31	27	1120	1240	1610	1610	1440	1490
MIN	36	22	19	23	22	21	29	630	941	1190	1330	584
AC-FT	20680	1880	1450	1500	1510	1490	25530	63170	80190	91260	84640	76570

CAL YR 1980 TOTAL 229051 MEAN 626 MAX 1900 MIN 16 AC-FT 454300
WTR YR 1981 TOTAL 226809 MEAN 621 MAX 1610 MIN 19 AC-FT 449900

14057500 FALL RIVER NEAR LA PINE, OR

LOCATION.--Lat 43°47'48", long 121°34'18", in NW¼SE¼ sec.31, T.20 S., R.10 E., Deschutes County, Hydrologic Unit 17070301, on left bank 50 ft (15 m) downstream from pond spillway at State fish hatchery, 9 mi (14 km) northwest of La Pine, and at mile 4.8 (7.7 km).

DRAINAGE AREA.--45.1 mi^2 (116.8 km^2), hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--July 1938 to current year. Records for May to September 1912 at site 3 mi (4.8 km) downstream not equivalent owing to difference in drainage area. Prior to Oct. 1, 1964, published as "near Lapine."

REVISED RECORDS.--WSP 984: 1938-42(M,m).

GAGE.--Water-stage recorder. Altitude of gage is 4,220 ft (1,286 m), by barometer.

REMARKS.--Records excellent. Diversion only to ponds at fish hatchery 50 ft (15 m) above station, from which water returns to river above station. Stream is spring fed and momentary extremes are caused by operation of fish hatchery.

AVERAGE DISCHARGE.--43 years, 150 ft^3/s (4.248 m^3/s), 108,700 acre-ft/yr (134 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 254 ft^3/s (7.19 m^3/s) June 5, 1965, gage height, 2.02 ft (0.616 m); minimum, 67 ft^3/s (1.90 m^3/s) sometime during period Sept. 20-30, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge recorded, 147 ft^3/s (4.16 m^3/s) May 18, gage height, 1.34 ft (0.408 m); minimum recorded, 88 ft^3/s (2.49 m^3/s) Oct. 29.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	99	102	101	100	101	102	103	104	109	106	107	105
2	99	101	104	100	101	102	102	104	109	106	107	105
3	99	101	102	100	101	103	103	104	109	106	107	105
4	99	101	102	100	101	103	103	104	108	106	107	105
5	99	101	102	100	101	103	103	104	108	107	107	105
6	99	103	102	100	101	102	102	104	108	106	107	104
7	99	106	101	100	100	103	102	104	108	105	107	104
8	99	102	101	100	101	102	102	103	107	106	107	105
9	99	102	101	100	101	102	103	104	107	106	106	104
10	99	102	102	100	100	102	102	106	107	106	106	104
11	99	101	102	100	101	102	104	107	107	106	106	104
12	99	101	100	100	101	102	103	107	106	107	106	104
13	101	100	100	100	101	102	103	107	106	106	106	104
14	101	101	100	100	101	102	104	107	106	106	106	103
15	101	101	100	100	101	103	104	108	106	107	106	103
16	101	101	98	101	104	102	104	107	105	107	106	103
17	100	101	98	101	101	102	104	108	105	107	106	103
18	101	101	98	101	103	103	104	110	105	107	106	103
19	100	101	98	101	103	103	104	110	105	107	106	103
20	100	101	98	101	101	103	104	109	105	107	106	102
21	100	103	102	101	101	104	104	109	105	107	106	102
22	99	101	100	101	101	103	104	109	106	107	106	102
23	99	101	100	101	102	103	104	109	105	107	106	103
24	99	101	102	101	103	103	104	109	106	107	106	102
25	101	100	102	101	102	104	104	109	106	107	106	102
26	102	100	100	101	102	102	104	109	106	107	106	104
27	102	100	100	102	102	103	104	110	106	107	105	104
28	101	100	100	102	102	103	104	110	106	107	105	103
29	101	101	100	102	---	103	104	110	106	107	106	102
30	102	100	98	101	---	103	104	110	106	107	105	102
31	102	---	98	101	---	103	---	109	---	107	105	---
TOTAL	3101	3037	3112	3119	2840	3182	3103	3324	3194	3304	3290	3104
MEAN	100	101	100	101	101	103	103	107	106	107	106	103
MAX	102	106	104	102	104	104	104	110	109	107	107	105
MIN	99	100	98	100	100	102	102	103	105	105	105	102
AC-FT	6150	6020	6170	6190	5630	6310	6150	6590	6340	6550	6530	6160

CAL YR 1980 TOTAL 37947 MEAN 104 MAX 121 MIN 94 AC-FT 75270
WTR YR 1981 TOTAL 37710 MEAN 103 MAX 110 MIN 98 AC-FT 74800

14059500 CRESCENT LAKE NEAR CRESCENT, OR

LOCATION.--Lat 43°30'05", long 121°58'20", in SW¼ sec.11, T.24 S., R.6 E., Klamath County, Hydrologic Unit 17070302, Deschutes National Forest, on outlet works at dam on Crescent Creek, 0.8 mi (1.3 km) south of town of Crescent Lake, 14.0 mi (22.5 km) west of Crescent, and at mile 30.0 (48.3 km).

DRAINAGE AREA.--60.7 mi^2 (157 km^2), hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--August 1922 to current year.

REVISED RECORDS.--WSP 1218: Drainage area. WSP 1318: 1922-31. WSP 1448: 1923-31(M,m).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Oct. 1, 1956, nonrecording gage at nearby site at datum 4,825.16 ft (1,470.709 m), National Geodetic Vertical Datum of 1929. Oct. 1, 1956, to Sept. 12, 1966, nonrecording gage, at present site and datum.

REMARKS.--Reservoir originally formed by dam of earth and logs completed in 1922, reconstructed as earthfill dam in 1956. Capacity, 117,200 acre-ft (145 hm^3) between elevations 4,821.5 ft (1,469.59 m), sill of outlet gate and 4,853.0 ft (1,479.19 m), crest of spillway. Maximum allowable storage, 86,050 acre-ft (106 hm^3) elevation, 4,845.32 ft (1,476.854 m). Dead storage about 500,000 acre-ft (616 hm^3) Oregon Game Commission survey. Records given herein represent total contents (previously reported as usable contents) above elevation 4,821.5 ft (1,469.59 m), water surface probably cannot be lowered below elevation 4,823.4 ft (1,470.17 m), 5,360 acre-ft (6.61 hm^3), owing to natural flow through reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 93,010 acre-ft (115 hm^3) June 6, 1975, elevation, 4,847.09 ft (1,477.393 m); minimum observed, 9,640 acre-ft (11.9 hm^3) Oct. 21, 1931, elevation, 4,827.91 ft (1,471,547 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 31,880 acre-ft (39.3 hm^3) June 13, elevation, 4,831.00 ft (1,472.489 m); minimum observed, 10,720 acre-ft (13.2 hm^3) Sept. 25, elevation, 4,825.02 ft (1,470.666 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	-	a13,240	-
Oct. 31	-	a13,180	-60
Nov. 30	4,826.47	15,800	+2,620
Dec. 31	4,827.82	20,540	+4,740
CAL YR 1980	-	-	-2,510
Jan. 31	4,828.28	22,150	+1,610
Feb. 28	4,829.34	25,900	+3,750
Mar. 31	4,829.74	27,340	+1,440
Apr. 30	4,830.14	28,780	+1,440
May 31	4,830.66	30,660	+1,880
June 30	4,830.31	29,400	-1,260
July 31	4,827.60	19,760	-9,640
Aug. 31	-	a12,610	-7,150
Sept.30	-	a10,970	-1,640
WTR YR 1981	-	-	-2,270

a Contents interpolated.

14060000 CRESCENT CREEK AT CRESCENT LAKE, NEAR CRESCENT, OR

LOCATION.--Lat 43°30'11", long 121°58'20", in SE¼SW¼ sec.11, T.24 S., R.6 E., Klamath County, Hydrologic Unit 17070302, Deschutes National Forest, on left bank 400 ft (122 m) downstream from Crescent Lake Dam, 0.5 mi (0.8 km) south of town of Crescent Lake, 14 mi (23 km) west of Crescent, and at mile 29.9 (48.1 km).

DRAINAGE AREA.--60.7 mi^2 (157.2 km^2), hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--January to September 1911 (gage heights and discharge measurements only), January 1912 to July 1915, July to September 1927, May 1928 to current year. Published as Crescent Lake outlet near Crescent January 1911 to September 1912, and as Crescent Creek at outlet of Crescent Lake, near Crescent October 1913 to July 1915.

REVISED RECORDS.--WSP 1218: Drainage area.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 4,819.96 ft (1,469.124 m) National Geodetic Vertical Datum of 1929. See WSP 1935 for history of changes prior to Sept. 11, 1956.

REMARKS.--Records good. Flow regulated since 1922 by Crescent Lake (see station 14059500). No diversion above station.

AVERAGE DISCHARGE.--55 years (water years 1913-14, 1929-81), 57.6 ft^3/s (1.631 m^3/s), 41,730 acre-ft/yr (51.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 313 ft^3/s (8.86 m^3/s) July 9, 1929, Aug. 9, 1936; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 283 ft^3/s (8.01 m^3/s) July 31, gage height, 3.02 ft (0.920 m); no flow Dec. 31 to May 12, Sept. 24-30.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	1.8	3.8	.00	.00	.00	.00	.00	29	88	208	76
2	13	1.6	4.0	.00	.00	.00	.00	.00	29	87	175	79
3	13	1.2	4.3	.00	.00	.00	.00	.00	29	87	159	77
4	13	1.4	4.5	.00	.00	.00	.00	.00	29	87	150	75
5	12	1.8	4.5	.00	.00	.00	.00	.00	31	86	190	56
6	12	1.8	4.8	.00	.00	.00	.00	.00	32	86	179	33
7	11	1.8	4.9	.00	.00	.00	.00	.00	32	86	185	22
8	11	1.8	4.9	.00	.00	.00	.00	.00	32	86	163	19
9	9.2	1.8	5.1	.00	.00	.00	.00	.00	33	85	133	25
10	8.3	2.0	5.3	.00	.00	.00	.00	.00	33	84	156	25
11	7.5	2.0	5.3	.00	.00	.00	.00	.00	33	84	173	43
12	5.6	2.3	5.3	.00	.00	.00	.00	.00	33	83	173	43
13	34	2.3	5.3	.00	.00	.00	.00	4.9	33	83	165	36
14	45	2.5	5.2	.00	.00	.00	.00	18	33	119	149	48
15	43	2.3	5.1	.00	.00	.00	.00	18	33	174	120	51
16	41	2.5	5.3	.00	.00	.00	.00	18	33	174	84	54
17	40	2.8	5.2	.00	.00	.00	.00	18	66	173	99	59
18	40	2.5	5.1	.00	.00	.00	.00	18	91	170	127	43
19	38	2.8	4.9	.00	.00	.00	.00	18	91	169	121	30
20	38	2.8	5.1	.00	.00	.00	.00	18	91	167	120	19
21	37	3.3	5.2	.00	.00	.00	.00	18	90	165	115	52
22	36	3.5	5.2	.00	.00	.00	.00	18	90	162	83	57
23	36	3.5	5.3	.00	.00	.00	.00	18	91	185	71	22
24	34	3.8	5.3	.00	.00	.00	.00	18	91	214	86	.00
25	32	3.5	5.4	.00	.00	.00	.00	18	90	209	105	.00
26	33	3.5	6.0	.00	.00	.00	.00	21	90	203	100	.00
27	33	3.8	6.1	.00	.00	.00	.00	29	89	194	92	.00
28	16	3.8	6.6	.00	.00	.00	.00	29	89	185	79	.00
29	2.3	3.8	6.8	.00	---	.00	.00	29	89	175	55	.00
30	2.3	3.8	3.5	.00	---	.00	.00	29	88	168	43	.00
31	2.0	---	.00	.00	---	.00	---	29	---	190	63	---
TOTAL	712.2	78.1	153.30	.00	.00	.00	.00	386.90	1743	4308	3921	1044.00
MEAN	23.0	2.60	4.95	.000	.000	.000	.000	12.5	58.1	139	126	34.8
MAX	45	3.8	6.8	.00	.00	.00	.00	29	91	214	208	79
MIN	2.0	1.2	.00	.00	.00	.00	.00	.00	29	83	43	.00
AC-FT	1410	155	304	.00	.00	.00	.00	767	3460	8540	7780	2070

CAL YR 1980 TOTAL 15202.40 MEAN 41.5 MAX 192 MIN .00 AC-FT 30150
WTR YR 1981 TOTAL 12346.50 MEAN 33.8 MAX 214 MIN .00 AC-FT 24490

14063000 LITTLE DESCHUTES RIVER NEAR LA PINE, OR

LOCATION.--Lat 43°41'21", long 121°30'06", in SW¼SW¼ sec.2, T.22 S., R.10 E., Deschutes County, Hydrologic Unit 17070302, on right bank 10 ft (3 m) downstream from highway bridge at former town of Rosland, 1.1 mi (1.8 km) north of La Pine, and at mile 26.8 (43.1 km).

DRAINAGE AREA.--859 mi^2 (2,225 km^2), hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--September 1910 to January 1911, March, April, August 1911, March to September 1912, June to October 1913, June to November 1918, August to October 1920, May 1924 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as Deschutes River near Lapine 1910-12, as East Fork Deschutes River near Lapine 1913-20, and as Little Deschutes River near Lapine 1924-64.

REVISED RECORDS.--WSP 1218: 1950.

GAGE.--Water-stage recorder. Datum of gage is 4,192.18 ft (1,277.968 m) National Geodetic Vertical Datum of 1929. Sept. 1, 1910, to Aug. 31, 1911, nonrecording gage at present site at different datum. Mar. 1 to Sept. 30, 1912, nonrecording gage at site 1.2 mi (1.9 km) downstream at different datum. June 1, 1913, to Sept. 28, 1928, nonrecording gage and Sept. 29, 1928, to Sept. 30, 1931, water-stage recorder a present site at different datums.

REMARKS.--Records good. Flow regulated since 1922 by Crescent Lake (see station 14063000). Many diversions for irrigation above station.

AVERAGE DISCHARGE.--57 years (water years 1925-81), 203 ft^3/s (5.749 m^3/s), 147,100 acre-ft/yr (181 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,660 ft^3/s (104 m^3/s) Dec. 25, 1964, gage height, 8.18 ft (2.493 m); minimum, 8 ft^3/s (0.23 m^3/s) Sept. 2, 3, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 428 ft^3/s (12.1 m^3/s) Dec. 27, gage height, 5.21 ft (1.588 m); maximum gage height, 7.70 ft (2.347 m) Feb. 20, result of ice jam; minimum discharge, 25 ft^3/s (0.71 m^3/s) Sept. 26.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	51	90	274	110	207	143	85	80	130	175	53
2	40	52	102	243	90	196	145	81	79	121	219	69
3	38	53	183	221	102	187	139	84	77	109	214	76
4	35	52	284	203	100	181	131	87	73	103	182	79
5	32	50	282	192	98	176	127	86	70	108	165	79
6	31	51	203	179	92	168	123	85	70	115	153	87
7	29	75	159	167	94	158	120	83	72	111	200	68
8	29	149	168	161	89	154	117	79	92	118	176	54
9	28	186	133	151	81	150	115	75	176	122	183	46
10	28	175	113	145	92	146	117	72	214	117	145	40
11	28	138	100	136	94	143	117	68	202	111	126	34
12	31	113	98	135	89	140	118	64	173	109	163	31
13	34	96	90	128	95	137	127	60	151	121	166	36
14	36	84	90	120	113	135	129	59	143	110	167	40
15	61	74	92	122	161	134	120	65	137	105	156	37
16	75	70	94	126	180	135	115	76	126	162	144	42
17	73	63	92	121	251	141	113	87	115	190	104	43
18	70	60	95	116	345	137	112	98	106	192	79	44
19	66	60	93	116	360	134	112	125	148	191	106	50
20	62	60	98	114	392	140	115	144	160	189	119	43
21	60	63	96	112	378	150	124	136	158	186	115	37
22	64	71	110	112	343	146	124	113	156	182	117	33
23	74	88	154	116	304	149	118	100	152	181	105	40
24	86	108	165	115	278	142	108	95	148	184	83	53
25	78	103	196	114	266	136	104	103	143	213	69	38
26	58	92	283	110	249	145	120	111	139	228	93	26
27	54	83	406	111	233	149	135	102	144	226	103	38
28	52	77	414	117	220	138	128	98	168	220	96	44
29	52	79	395	118	---	130	107	91	155	207	89	44
30	50	83	356	111	---	132	97	82	153	195	78	40
31	50	---	314	105	---	141	---	76	---	184	60	---
TOTAL	1546	2559	5548	4411	5299	4657	3620	2770	3980	4840	4150	1444
MEAN	49.9	85.3	179	142	189	150	121	89.4	133	156	134	48.1
MAX	86	186	414	274	392	207	145	144	214	228	219	87
MIN	28	50	90	105	81	130	97	59	70	103	60	26
AC-FT	3070	5080	11000	8750	10510	9240	7180	5490	7890	9600	8230	2860

CAL YR 1980 TOTAL 59145 MEAN 162 MAX 566 MIN 28 AC-FT 117300
WTR YR 1981 TOTAL 44824 MEAN 123 MAX 414 MIN 26 AC-FT 88910

14064500 DESCHUTES RIVER AT BENHAM FALLS, NEAR BEND, OR

LOCATION.--Lat 43°55'49", long 121°24'39", in SW¼NE¼ sec.16, T.19 S., R.11 E., Deschutes County, Hydrologic Unit 17070301, Deschutes National Forest, on right bank 0.5 mi (0.8 km) upstream from Benham Falls, 10 mi (16 km) southwest of Bend, and at mile 181.4 (291.9 km).

DRAINAGE AREA.--1,759 mi² (4,556 km²).

PERIOD OF RECORD.--April 1906 to September 1913, April to September 1914, August to December 1920, April to September 1921, February 1924 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as "at West's ranch, near Lava" April 1906 to February 1909, April to September 1914. Records for January 1905 to March 1906 and October 1913 to September 1914, published under present name in WSP 370 and 394, have been found to be unreliable and should not be used.

REVISED RECORDS.--See PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 4,142.10 ft (1,262.512 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). See WSP 1738 for history of changes prior to Nov. 20, 1958.

REMARKS.--Records excellent. Flow regulated by Crane Prairie Reservoir, Crescent Lake, and Wickiup Reservoir (see elsewhere in this report). Many diversions for irrigation above station.

AVERAGE DISCHARGE.--64 years (water years 1907-13, 1925-81), 1,410 ft³/s (39.93 m³/s), 1,022,000 acre-ft/yr (1.26 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft³/s (142 m³/s), estimated, Nov. 27, 1909 (gage height not determined); minimum, 363 ft³/s (10.3 m³/s) Jan. 20, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,140 ft³/s (60.6 m³/s) July 28, gage height, 5.40 ft (1.646 m); minimum, 452 ft³/s (12.8 m³/s) Dec. 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1260	501	493	746	511	660	577	1610	1590	2040	2000	1810
2	1160	494	524	706	509	640	581	1640	1740	2030	1940	1840
3	1140	492	565	679	513	625	581	1610	1940	2030	1940	1850
4	1100	489	600	656	525	610	577	1610	1980	2010	1950	1860
5	1090	487	666	636	538	600	567	1620	2060	1960	1940	1860
6	1090	488	690	621	536	590	560	1630	2070	2000	1930	1860
7	1090	521	626	608	519	580	556	1620	2010	1980	1910	1860
8	1080	549	510	598	509	570	556	1600	1960	1810	1910	1860
9	1100	555	483	590	500	565	553	1580	1700	1700	1930	1850
10	1150	594	527	581	502	555	549	1570	1510	1700	1920	1840
11	1140	608	527	573	529	550	556	1570	1540	1740	1910	1840
12	1160	596	511	566	533	545	640	1560	1540	1760	1880	1830
13	1160	567	485	545	537	540	661	1580	1530	1780	1890	1830
14	1150	546	491	542	554	540	700	1650	1500	1860	1910	1830
15	1090	534	494	542	565	540	740	1710	1490	1900	1910	1830
16	775	519	493	531	623	540	728	1690	1510	1920	1900	1830
17	737	507	489	540	669	540	740	1620	1630	2010	1870	1820
18	667	503	486	559	701	540	891	1650	1800	2030	1850	1820
19	565	497	488	550	786	540	1140	1470	1920	2040	1820	1820
20	540	495	498	550	811	570	1170	1230	1960	2040	1810	1810
21	533	481	513	552	827	570	1170	1190	1980	2090	1830	1770
22	512	491	522	549	830	570	1180	1280	1980	2110	1820	1740
23	503	508	525	545	810	570	1190	1400	1980	2110	1810	1660
24	501	502	561	546	778	570	1200	1490	1970	2100	1800	1580
25	503	501	626	545	743	570	1350	1500	1970	2100	1780	1500
26	505	515	633	550	720	570	1500	1460	1980	2110	1770	1470
27	511	517	677	555	700	570	1510	1440	2000	2130	1760	1480
28	508	510	751	557	680	570	1500	1450	2000	2130	1760	1380
29	510	502	796	555	---	570	1450	1490	2010	2130	1760	1130
30	521	492	802	558	---	570	1520	1570	2020	2120	1770	1040
31	518	---	779	540	---	570	---	1600	---	2060	1800	---
TOTAL	25869	15561	17831	17971	17558	17710	27193	47690	54870	61530	57780	51500
MEAN	834	519	575	580	627	571	906	1538	1829	1985	1864	1717
MAX	1260	608	802	746	830	660	1520	1710	2070	2130	2000	1860
MIN	501	481	483	531	500	540	549	1190	1490	1700	1760	1040
AC-FT	51310	30870	35370	35650	34830	35130	53940	94590	108800	122000	114600	102200

CAL YR 1980 TOTAL 434479 MEAN 1187 MAX 2430 MIN 480 AC-FT 861800
WTR YR 1981 TOTAL 413063 MEAN 1132 MAX 2130 MIN 481 AC-FT 819300

NOTE.--No gage-height record Feb. 16 to Mar. 31.

DIVERSIONS FROM DESCHUTES RIVER NEAR BEND, OR

The following six canals, all in Deschutes County, Hydrologic Unit 17070301, are the only diversions from Deschutes River between gaging stations at Benham Falls and below Bend.

14065500 ARNOLD CANAL NEAR BEND diverts at mile 174.5 (280.8 km) from right bank at head of Lava Island, in SW¼ sec.27, T.18 S., R.11 E., water used for irrigation southeast of Bend. Records available, October 1912 to current year.

14066500 CENTRAL OREGON CANAL ABOVE PILOT BUTTE CANAL, NEAR BEND diverts at mile 169.5 (272.7 km) from right bank in NE¼ sec.13, T.18 S., R.11 E., water used for irrigation east of Bend. Records available, October 1932 to current year.

14068500 DESCHUTES COUNTY MUNICIPAL IMPROVEMENT DISTRICT CANAL AT BEND diverts at mile 165.8 (266.8 km) from left bank in SW¼SE¼ sec.29, T.17 S., R.12 E., at Bend, water stored in Crescent Lake for Tumalo project is diverted by this canal and supplements flow in Tumalo project feed canal for irrigation near Tumalo. Records available, May 1923 to current year.

14069000 NORTH UNIT MAIN CANAL NEAR BEND diverts at mile 164.8 (265.2 km) from right bank in NE¼ sec.29, T.17 S., R.12 E., water used for irrigation near Madras. Records available, October 1945 to current year.

14069500 NORTH CANAL NEAR BEND diverts at mile 164.8 (265.2 km) from right bank in NE¼ sec.29, T.17 S., R.12 E., water used for irrigation north of Bend, mostly near Redmond. Records available, June 1913 to current year.

14070000 SWALLEY CANAL NEAR BEND diverts at mile 164.8 (265.2 km) from right bank in NE¼ sec.29, T.17 S., R.12 E., water used for irrigation north of Bend. Records available 1913, to current year.

Records of monthly discharge of these canals, published as a group, are available from October 1926 to current year; records for each canal published separately prior to 1926.

DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1980 to SEPTEMBER 1981

MONTH	ARNOLD CANAL	CENTRAL OREGON CANAL	DESCHUTES COUNTY MUNICIPAL IMPROVEMENT DISTRICT CANAL	NORTH UNIT MAIN CANAL	NORTH CANAL	SWALLEY CANAL	TOTAL
OCTOBER	2,300	9,010	0	16,120	8,010	3,330	38,770
NOVEMBER	704	2,740	0	0	3,080	448	6,970
DECEMBER	417	2,190	0	0	1,560	563	4,730
JANUARY	345	2,220	0	0	1,790	696	5,050
FEBRUARY	498	2,150	0	0	1,790	407	4,840
MARCH	359	2,130	0	0	1,920	430	4,840
APRIL	1,380	11,570	0	9,610	9,620	2,690	34,870
MAY	5,230	26,510	263	24,310	23,170	5,710	85,190
JUNE	3,880	28,710	1,780	32,820	25,500	6,590	99,280
JULY	4,190	31,670	6,220	34,150	29,510	6,270	112,000
AUGUST	6,690	32,530	4,140	23,590	31,440	7,330	105,700
SEPTEMBER	5,610	28,060	2,040	26,450	27,470	5,500	95,130
WTR YR 1981	31,600	179,500	14,400	167,100	164,900	39,960	597,400

14070500 DESCHUTES RIVER BELOW BEND, OR

LOCATION.--Lat 44°04'59", long 121°18'24", in SE¼SE¼ sec.20, T.17 S., R.12 E., Deschutes County, Hydrologic Unit 17070301, on right bank 0.4 mi (0.6 km) downstream from North Canal, 0.5 mi (0.8 km) north of Bend city limits, and at mile 164.4 (264.5 km).

DRAINAGE AREA.--1,899 mi² (4,918 km²).

PERIOD OF RECORD.--October 1914 to current year.

REVISED RECORDS.--WSP 1318: 1916-18(M), 1926(M), 1931(M).

GAGE.--Water-stage recorder. Datum of gage is 3,503.96 ft (1,068.007 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, water-stage recorder at site 200 ft (61 m) downstream at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good. Flow regulated by powerplant at Bend, Crescent Lake, Crane Prairie Reservoir, and Wickiup Reservoir (see elsewhere in this report). Six large canals and several small ditches divert water above station for irrigation.

AVERAGE DISCHARGE.--67 years, 502 ft³/s (14.22 m³/s), 363,700 acre-ft/yr (448 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,820 ft³/s (79.9 m³/s) Dec. 27, 1964, gage height, 4.90 ft (1.494 m); maximum gage height, 5.38 ft (1.640 m) Dec. 15, 1932 (backwater from ice); minimum discharge, 1.0 ft³/s (0.028 m³/s) Aug. 25, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge near this site since 1905, 4,820 ft³/s (137 m³/s) Nov. 27, 1909.

EXTREMES FOR CURRENT YEAR.--Maximum recorded discharge, 784 ft³/s (22.2 m³/s) Dec. 30, gage height, 3.12 ft (0.951 m); minimum, 14 ft³/s (0.40 m³/s) Aug. 26.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	455	445	680	460	560	475	43	28	26	28	23
2	30	450	515	644	460	540	480	39	29	25	28	23
3	29	445	515	611	470	530	485	38	29	25	30	23
4	27	435	540	595	470	520	480	38	29	26	49	23
5	27	440	600	573	480	500	480	39	29	25	36	23
6	28	445	633	556	480	490	435	39	29	28	29	22
7	28	500	600	540	470	490	422	36	28	29	28	23
8	28	500	500	530	450	480	413	38	28	26	28	29
9	28	500	450	520	450	290	408	38	27	26	27	27
10	30	340	495	510	460	280	408	38	25	25	27	25
11	30	345	495	505	470	270	408	38	25	25	27	24
12	30	350	480	377	480	270	205	38	23	26	27	24
13	30	510	465	286	290	280	34	38	23	27	27	24
14	32	500	198	274	270	430	43	38	23	27	27	24
15	85	470	21	274	260	420	62	38	24	27	26	24
16	81	440	25	342	270	180	36	34	25	29	26	25
17	59	420	28	465	310	110	39	34	25	28	26	24
18	40	400	122	480	580	120	49	34	25	27	26	29
19	39	380	417	318	620	130	100	33	25	26	26	27
20	41	380	390	130	660	250	38	43	25	26	26	27
21	95	360	377	130	700	480	113	33	25	27	25	26
22	132	380	390	130	720	480	120	32	25	29	25	26
23	120	380	390	250	500	480	38	29	29	33	25	25
24	209	360	417	455	422	480	38	28	25	29	32	23
25	417	47	525	455	404	480	39	28	26	30	28	23
26	413	39	578	455	386	480	46	27	25	32	21	23
27	404	34	595	455	431	480	40	26	26	32	23	24
28	417	71	656	475	595	490	39	35	26	30	23	24
29	422	226	710	500	---	490	39	28	25	30	23	26
30	431	377	722	500	---	480	40	29	26	30	23	26
31	455	---	710	480	---	475	---	28	---	29	23	---
TOTAL	4269	10979	14004	13495	13018	12435	6052	1077	782	860	845	739
MEAN	138	366	452	435	465	401	202	34.7	26.1	27.7	27.3	24.6
MAX	455	510	722	680	720	560	485	43	29	33	49	29
MIN	27	34	21	130	260	110	34	26	23	25	21	22
AC-FT	8470	21780	27780	26770	25820	24660	12000	2140	1550	1710	1680	1470

CAL YR 1980 TOTAL 85483 MEAN 234 MAX 880 MIN 21 AC-FT 169600
WTR YR 1981 TOTAL 78555 MEAN 215 MAX 722 MIN 21 AC-FT 155800

14070700 BRIDGE CREEK NEAR BEND, OR

LOCATION.--Lat 44°01'52", long 121°34'16", in SW¼NE¼ sec.7, T.18 S., R.10 E., Deschutes County, Hydrologic Unit 17070301, on left bank 0.2 mi (0.3 km) upstream from city of Bend water intake dam, 14 mi (23 km) west of Bend, and at mile 0.4 (0.6 km).

DRAINAGE AREA.--6.58 mi² (17.0 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 5,180 ft (1,579 m), from topographic map.

REMARKS.--Records fair. Water is diverted into Bridge Creek from unnamed springs on Middle Fork of Tumalo Creek 3.0 mi (4.8 km) above station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 382 ft³/s (10.8 m³/s) Dec. 25, from rating curve extended above 110 ft³/s (3.12 m³/s) on basis of slope-area measurement of peak flow, gage height, 1.86 ft (0.567 m); minimum, 3.6 ft³/s (0.10 m³/s) Oct. 1-9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	18	19	42	22	30	19	36	27	18	16	16
2	3.6	18	21	39	21	29	18	35	26	19	17	16
3	3.6	18	22	35	21	27	18	32	27	21	16	16
4	3.6	18	22	32	22	27	18	30	31	20	17	15
5	3.6	17	21	30	20	25	18	28	28	17	18	16
6	3.6	22	23	29	20	27	18	27	27	18	19	15
7	3.6	34	35	28	20	25	18	27	34	18	20	17
8	3.6	24	58	28	19	24	18	26	40	18	19	17
9	3.6	22	23	27	19	24	18	26	35	17	18	15
10	17	19	21	27	19	24	18	27	30	16	20	15
11	18	19	20	26	19	23	18	26	28	17	20	16
12	19	18	20	26	19	23	18	25	28	16	19	16
13	19	19	20	26	20	23	19	25	29	16	17	15
14	18	19	20	25	23	23	18	25	27	17	19	15
15	18	19	19	25	23	22	19	25	26	18	19	16
16	18	18	19	25	57	22	19	25	30	17	19	16
17	17	18	19	24	42	21	19	25	28	17	18	16
18	17	18	19	24	71	20	20	26	30	17	18	15
19	17	18	19	24	70	20	21	28	35	17	16	15
20	17	18	19	26	56	20	21	27	30	16	16	15
21	17	20	21	29	49	20	20	27	25	16	17	15
22	16	23	26	27	46	20	23	27	22	16	17	15
23	16	21	26	27	43	20	27	27	21	16	17	15
24	16	20	43	25	40	19	28	30	20	15	16	15
25	16	20	192	24	38	19	26	32	22	16	16	15
26	16	19	134	24	35	19	25	30	20	16	16	17
27	16	19	89	23	34	19	24	29	20	16	16	21
28	16	19	72	23	32	19	26	29	20	16	16	17
29	16	19	62	23	---	19	30	30	21	16	16	16
30	17	19	56	23	---	19	35	29	19	17	16	16
31	17	---	46	25	---	19	---	27	---	17	16	---
TOTAL	406.4	593	1226	841	920	691	637	868	806	527	540	475
MEAN	13.1	19.8	39.5	27.1	32.9	22.3	21.2	28.0	26.9	17.0	17.4	15.8
MAX	19	34	192	42	71	30	35	36	40	21	20	21
MIN	3.6	17	19	23	19	19	18	25	19	15	16	15
AC-FT	806	1180	2430	1670	1820	1370	1260	1720	1600	1050	1070	942

WTR YR 1981 TOTAL 8530.4 MEAN 23.4 MAX 192 MIN 3.6 CFSM 3.56 IN 48.22 AC-FT 16920

14073001 TUMALO CREEK NEAR BEND, OR

LOCATION.--Lat 44°05'16", long 121°22'18", in NW¼SE¼ sec.23, T.17S. R.11 E., Deschutes County, Hydrologic Unit 17070301, on left bank 0.25 mi (0.40 km) upstream from diversion to Tumalo feed canal, 3.0 mi (4.8 km) northwest of Bend, and at mile 3.1 (5.0 km).

DRAINAGE AREA.--47.3 mi^2 (123 km^2).

PERIOD OF RECORD.--October 1913 to December 1921, February, April to November 1922, March 1923 to current year. Published as "below Bend" 1949-50.

REVISED RECORDS.--WSP 864: 1937. WSP 1218: Drainage area. WSP 1448: 1923(M), 1927-29(M), 1935(M), 1942(M). WDR OR-75-1: 1974(M).

GAGE.--Water-stage recorder. Datum of gage is 3,566.82 ft (1,087.167 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 27, 1915, nonrecording gage and Apr. 27, 1915, to Sept. 30, 1918, water-stage recorder or nonrecording gage at same site and datum.

REMARKS.--Records good. All records given herein include flow in Columbia Southern Canal, which diverts 8 mi (13 km) above station for irrigation of land near Tumalo. No flow in the canal Oct. 1 to Mar. 31, Apr. 15-30, Aug. 18 to Sept. 30. Crater Creek Canal diverts flow of tributaries of Soda Creek into head of Tumalo Creek. Diversion above station for municipal supply of Bend since Dec. 15, 1926, 5,350 acre-ft (6.60 hm^3) during water year 1981.

AVERAGE DISCHARGE.--53 years (water years 1914, 1917-21, 1924-55, 1957-81), 101 ft^3/s (2.860 m^3/s), 73,170 acre-ft/yr (90.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,140 ft^3/s (32.3 m^3/s) Nov. 9, 1968 (no flow in canal), from rating curve extended above 780 ft^3/s (22.1 m^3/s) on basis of slope-area measurement at 3.45 ft (1.052 m); minimum daily, 25 ft^3/s (0.71 m^3/s) Jan. 3, 1924.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 750 ft^3/s (21.2 m^3/s) Dec. 26; minimum daily, 38 ft^3/s (1.08 m^3/s) Aug. 17, result of regulation.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	55	60	171	72	99	74	152	153	97	57	48
2	50	59	82	145	67	96	71	136	160	88	54	48
3	48	56	90	127	65	96	69	140	161	83	53	45
4	48	54	79	113	67	94	77	117	251	89	54	46
5	48	51	72	107	69	92	79	106	218	114	52	48
6	47	108	66	102	69	92	67	96	215	111	52	48
7	47	246	60	96	72	90	62	94	188	90	51	47
8	48	95	56	94	69	88	62	89	451	77	51	44
9	48	81	58	92	62	86	63	94	262	68	52	44
10	47	72	60	91	60	88	58	109	187	68	52	45
11	48	69	64	89	62	88	59	103	156	67	51	46
12	54	62	63	84	60	86	58	100	137	65	50	47
13	55	58	63	76	65	86	58	103	130	66	51	47
14	52	54	61	74	78	84	44	111	117	63	49	47
15	50	56	62	72	69	84	62	110	107	61	48	45
16	50	59	62	74	221	82	60	93	131	62	49	46
17	49	58	62	77	167	78	62	96	120	62	38	47
18	49	59	62	76	298	78	63	119	135	60	49	49
19	49	60	62	76	338	80	76	126	207	61	51	52
20	48	59	67	76	224	76	70	120	172	61	52	51
21	48	67	80	87	173	76	70	121	139	58	52	51
22	48	72	99	85	155	74	80	121	128	58	49	51
23	49	64	86	85	143	72	92	131	118	56	49	51
24	49	60	142	78	132	70	101	165	101	55	49	50
25	51	61	491	74	110	78	92	206	101	57	51	52
26	51	60	571	75	103	72	86	186	98	62	49	67
27	49	60	426	75	103	70	82	164	101	59	48	113
28	49	68	314	74	101	72	90	159	91	56	48	76
29	50	68	247	69	---	78	101	171	87	57	48	62
30	50	63	251	67	---	72	119	182	96	56	48	57
31	50	---	205	69	---	72	---	168	---	57	49	---
TOTAL	1528	2114	4223	2750	3274	2549	2207	3988	4718	2144	1556	1570
MEAN	49.3	70.5	136	88.7	117	82.2	73.6	129	157	69.2	50.2	52.3
MAX	55	246	571	171	338	99	119	206	451	114	57	113
MIN	47	51	56	67	60	70	44	89	87	55	38	44
AC-FT	3030	4190	8380	5450	6490	5060	4380	7910	9360	4250	3090	3110

CAL YR 1980 TOTAL 32310 MEAN 88.3 MAX 571 MIN 40 AC-FT 64090
WTR YR 1981 TOTAL 32621 MEAN 89.4 MAX 571 MIN 38 AC-FT 64700

14075000 SQUAW CREEK NEAR SISTERS, OR

LOCATION.--Lat 44°14'02", long 121°33'57", in SE¼SW¼ sec.29, T.15 S., R.10 E., Deschutes County, Hydrologic Unit 17070301, on right bank 800 ft (244 m) upstream from intake of McAllister ditch, 4 mi (6 km) south of Sisters, and at mile 26.8 (43.1 km).

DRAINAGE AREA.--54.8 mi² (141.9 km²).

PERIOD OF RECORD.--July 1906 to October 1918, June to August 1919, October 1919 to September 1920, May 1921 to September 1924 (no winter records), April 1925 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1218: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,490 ft (1,064 m) by barometer. July 1, 1906, to May 29, 1913, nonrecording gage at site 1,000 ft (305 m) downstream at different datum, below intake of McAllister ditch (records include flow in McAllister ditch). May 30, 1913, to Sept. 2, 1915, nonrecording gage and Mar. 24, 1916, to Oct. 5, 1928, water-stage recorder at site 300 ft (91 m) downstream at different datum. Oct. 6, 1928, to Nov. 7, 1967, water-stage recorder at site 200 ft (61 m) downstream at datum 2.64 ft (0.805 m) lower.

REMARKS.--Records good. No regulation. A canal near mouth of Pole Creek, a tributary above station, diverts entire flow of that creek for irrigation of lands near Sisters.

AVERAGE DISCHARGE.--69 years (water years 1907-18, 1920, 1926-81), 105 ft³/s (2.974 m³/s), 76,070 acre-ft/yr (93.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge since 1909, 2,000 ft³/s (56.6 m³/s) Dec. 25, 1980, from rating curve extended above 690 ft³/s (19.5 m³/s) on basis of slope-area measurement of peak flow; a maximum gage height of 9.2 ft (2.80 m) from water-borne ice was observed on Jan. 11, 1979, and probably occurred on Jan. 10, 1979; previous maximum gage height, about 8.75 ft (2.667 m), over top of gage Nov. 22, 1909, site and datum then in use (discharge not determined); minimum discharge, 14 ft³/s (0.40 m³/s) Mar. 2, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 470 ft³/s (13.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 7	0830	582	16.5	3.74	1.140	Feb. 16	1330	582	16.5	3.46	1.055
Dec. 25	1300	a*2,000	56.6	*6.10	1.859	Feb. 18	1800	678	19.2	3.71	1.131

Minimum recorded, 46 ft³/s (1.30 m³/s) Oct. 28.

a From rating curve extended above 690 ft³/s (19.5 m³/s) on basis of slope-area measurement of peak flow.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	57	71	188	70	102	68	111	114	114	84	71
2	61	54	117	174	70	100	65	95	116	108	84	68
3	63	52	114	162	66	97	65	89	116	108	83	67
4	63	52	95	152	65	95	65	84	141	115	82	67
5	62	49	85	144	66	90	66	81	144	129	83	67
6	61	107	82	137	63	89	64	77	147	123	85	67
7	61	228	78	132	63	90	63	75	150	106	87	68
8	60	106	65	125	66	87	63	74	276	95	88	69
9	56	89	67	120	65	85	62	75	186	92	89	70
10	56	79	70	115	62	84	62	78	148	92	89	65
11	55	78	70	110	64	82	61	77	135	89	88	65
12	59	71	70	105	62	81	60	76	128	89	90	67
13	57	64	71	104	73	80	62	79	122	89	90	67
14	55	60	69	103	76	79	63	81	114	89	87	64
15	52	64	69	100	68	78	64	81	112	91	88	65
16	52	69	69	98	267	76	62	76	120	93	85	67
17	51	69	69	96	150	74	62	77	113	95	83	67
18	51	68	68	95	358	74	64	87	121	92	83	73
19	51	67	67	94	277	76	65	90	159	92	83	67
20	51	67	71	91	180	75	62	84	148	92	80	60
21	50	92	92	103	158	73	63	83	132	91	76	59
22	50	93	125	100	148	72	71	86	129	90	78	59
23	50	77	94	94	139	71	83	90	124	89	79	58
24	48	71	250	86	133	71	90	106	119	88	78	58
25	50	72	1230	81	122	76	77	131	120	89	75	58
26	49	69	766	82	116	71	72	118	120	92	73	71
27	49	72	422	81	111	69	69	109	115	91	70	118
28	49	76	271	80	107	69	79	108	110	93	71	71
29	49	75	231	76	---	72	90	113	110	91	71	58
30	48	70	236	73	---	69	99	123	116	86	68	54
31	48	---	206	70	---	69	---	117	---	84	68	---
TOTAL	1679	2317	5460	3371	3265	2476	2061	2831	4005	2977	2518	2005
MEAN	54.2	77.2	176	109	117	79.9	68.7	91.3	134	96.0	81.2	66.8
MAX	63	228	1230	188	358	102	99	131	276	129	90	118
MIN	48	49	65	70	62	69	60	74	110	84	68	54
AC-FT	3330	4600	10830	6690	6480	4910	4090	5620	7940	5900	4990	3980

CAL YR 1980 TOTAL 34979 MEAN 95.6 MAX 1230 MIN 46 AC-FT 69380
WTR YR 1981 TOTAL 34965 MEAN 95.8 MAX 1230 MIN 48 AC-FT 69350

14075000 SQUAW CREEK NEAR SISTERS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: June, July, August, 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
JUN												
18...	1430	113	54	7.1	9.0	8	2.0	.7	2.7	.7	19	.9
JUL												
31...	1540	81	26	6.8	12.5	8	2.0	.7	2.1	.6	8.0	2.0
AUG												
27...	1530	66	27	7.5	9.5	10	2.4	.9	2.3	.6	18	<1.0

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUN											
18...	.1	<.1	<.1	.80	.81	.030	.040	19	38	20	<1
JUL											
31...	1.4	.1	.11	.16	.26	.050	.040	19	33	20	<1
AUG											
27...	.1	.1	.11	.28	--	.020	.030	21	39	30	2

14076500 DESCHUTES RIVER NEAR CULVER, OR

LOCATION.--Lat 44°29'56", long 121°19'12", in NW¼SE¼ sec.29, T.12 S., R.12 E., Jefferson County, Hydrologic Unit 17070301, on right bank 2.5 mi (4.0 km) downstream from Squaw Creek, 6.0 mi (9.7 km) southwest of Culver, and at mile 120.6 (194.0 km).

DRAINAGE AREA.--2,705 mi² (7,006 km²).

PERIOD OF RECORD.--July 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,980 ft (603 m) National Geodetic Vertical Datum of 1929 (river-profile survey). July 14, 1952, to Sept. 30, 1961, at site 4.1 mi (6.6 km) downstream at different datum.

REMARKS.--Records good. Slight regulation by Crescent Lake and Crane Prairie and Wickiup Reservoirs (see elsewhere in this report). Many diversions for irrigation above station.

AVERAGE DISCHARGE.--29 years, 907 ft³/s (25.69 m³/s), 657,100 acre-ft/yr (811 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,680 ft³/s (189 m³/s) Dec. 24, 1964, gage height, 10.00 ft (3.048 m), from rating curve extended above 2,200 ft³/s (62.3 m³/s) on basis of slope-area measurement of peak flow; minimum, 418 ft³/s (11.8 m³/s) July 7, 8, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,650 ft³/s (75.0 m³/s) Dec. 26, gage height, 6.26 ft (1.908 m); minimum, 455 ft³/s (12.9 m³/s) June 20, July 2-5, Aug. 28.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	521	1030	999	1580	1090	1300	995	521	480	459	462	465
2	524	1040	1120	1480	1080	1270	1020	559	468	459	465	465
3	524	1020	1220	1420	1060	1250	1020	521	465	455	465	465
4	521	1020	1200	1370	1070	1190	1030	489	468	455	465	468
5	521	1010	1190	1320	1080	1160	1000	477	572	455	468	465
6	517	1040	1240	1300	1080	1140	999	474	524	459	480	462
7	517	1330	1240	1280	1080	1130	944	474	508	465	468	465
8	517	1270	1170	1250	1070	1120	932	474	622	465	468	468
9	517	1090	1060	1240	1060	1110	928	474	854	462	465	465
10	521	1080	1060	1220	1050	995	928	474	615	459	465	468
11	524	1130	1100	1210	1050	956	924	471	514	462	465	468
12	530	1140	1050	1190	1080	944	920	465	483	459	462	468
13	536	1110	1030	995	1060	940	662	465	480	459	465	465
14	536	1080	1050	956	874	1040	505	465	474	459	462	462
15	533	1070	741	948	835	1090	496	468	468	462	462	462
16	566	1030	589	940	980	1070	514	471	465	459	465	465
17	582	1010	543	1060	1110	839	505	471	462	459	465	465
18	566	952	536	1080	1320	767	486	483	462	462	462	465
19	540	916	652	1090	1830	794	517	486	462	462	462	465
20	540	858	944	782	1570	831	582	483	508	462	462	465
21	524	854	936	692	1520	964	508	477	502	459	462	465
22	511	866	1020	706	1570	1080	579	480	468	459	462	468
23	576	866	995	665	1550	1080	609	471	465	459	465	468
24	563	920	1040	824	1280	1080	549	480	462	462	465	465
25	679	723	2030	1070	1200	1090	576	483	465	465	465	468
26	874	572	2470	1080	1150	1090	563	536	462	465	471	474
27	878	595	1990	1110	1120	1010	553	546	459	465	468	493
28	924	612	1770	1130	1220	1000	521	486	459	468	459	530
29	964	659	1660	1130	---	1010	489	471	462	465	465	505
30	987	828	1680	1130	---	1000	505	477	459	459	465	483
31	999	---	1670	1110	---	995	---	480	---	462	465	---
TOTAL	19132	28721	36995	34358	33039	32335	21359	15052	15017	14286	14415	14125
MEAN	617	957	1193	1108	1180	1043	712	486	501	461	465	471
MAX	999	1330	2470	1580	1830	1300	1030	559	854	468	480	530
MIN	511	572	536	665	835	767	486	465	459	455	459	462
AC-FT	37950	56970	73380	68150	65530	64140	42370	29860	29790	28340	28590	28020

CAL YR 1980 TOTAL 278810 MEAN 762 MAX 2470 MIN 462 AC-FT 553000
WTR YR 1981 TOTAL 278834 MEAN 764 MAX 2470 MIN 455 AC-FT 553100

14080250 BEAR CREEK NEAR PRINEVILLE, OR

LOCATION.--Lat 44°03'40", long 120°43'54", in SE¼ sec.30, T.17 S., R.17 E., Crook County, Hydrologic Unit 17070304, on left bank upstream side of State Highway 27 bridge over Bear Creek, 17 mi (27.4 km) south of Prinville.

DRAINAGE AREA.--205 mi^2 (531 km^2).

PERIOD OF RECORD.--October 1975 to September 1981 (discontinued).

REVISED RECORDS.--WDR OR-78-1: 1977.

GAGE.--Water-stage recorder. Altitude of gage is 3,280 ft (1,000 m), from topographic map.

REMARKS.--Records poor. Flow regulated by reservoirs upstream. Diversions for irrigation above station.

AVERAGE DISCHARGE.--6 years, 7.12 ft^3/s (0.202 m^3/s), 5,160 acre-ft/yr (6.36 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 848 ft^3/s (24.0 m^3/s) Aug. 6, 1976, gage height, 7.01 ft (2.137 m); minimum, 0.11 ft^3/s (0.003 m^3/s) Aug. 15, 16, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29 ft^3/s (0.82 m^3/s) Feb. 17, gage height, 2.20 ft (0.671 m); minimum, 0.11 ft^3/s (0.003 m^3/s) Aug. 15, 16.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	2.4	1.9	4.0	1.5	5.7	5.7	2.5	2.3	1.5	.26	.40
2	2.9	2.4	3.0	3.8	1.9	5.2	5.7	2.4	2.3	1.3	.22	.36
3	2.9	2.4	2.9	3.8	2.1	4.9	5.4	2.1	2.3	1.2	.18	.36
4	2.7	2.3	2.9	3.6	2.3	5.2	4.2	2.0	2.3	1.2	.16	.36
5	2.5	2.3	2.9	3.2	2.4	5.7	3.4	1.9	2.0	1.4	.18	.36
6	2.5	2.3	2.5	3.2	2.7	4.7	3.4	1.9	1.6	1.7	.18	.36
7	2.5	3.0	1.9	3.2	2.3	4.5	3.4	1.7	1.6	1.6	.24	.32
8	2.5	2.9	1.4	3.2	2.3	4.7	3.4	1.7	2.0	1.4	.20	.36
9	2.5	2.7	1.6	3.0	2.7	4.5	4.2	1.7	2.3	1.3	.16	.36
10	2.5	2.5	1.9	2.9	2.7	4.5	4.5	1.6	2.0	1.3	.20	.36
11	2.5	2.5	2.4	3.0	2.7	5.4	4.2	1.5	1.9	1.1	.22	.36
12	2.5	2.5	2.3	2.7	2.9	6.8	4.7	1.4	2.3	1.1	.16	.32
13	2.7	2.3	2.1	2.7	2.9	7.1	4.5	1.4	3.0	.92	.14	.36
14	3.0	2.4	2.5	3.0	3.2	7.4	3.8	1.5	3.0	.78	.13	.32
15	3.0	2.5	3.0	2.7	3.2	7.1	2.9	1.5	2.7	.78	.13	.36
16	2.9	2.4	2.9	2.9	4.0	7.8	2.9	1.4	2.7	.66	.22	.36
17	2.9	2.4	2.5	3.0	18	7.8	3.4	1.4	2.5	.56	.26	.32
18	2.7	2.4	2.5	3.0	17	6.8	3.2	1.5	2.5	.48	.20	.32
19	2.7	2.4	2.5	3.0	23	7.8	3.2	2.9	2.4	.48	.22	.29
20	2.5	2.4	2.7	3.0	24	8.9	3.2	2.5	2.4	.48	.26	.29
21	2.5	2.4	2.9	2.9	19	8.5	3.4	2.1	2.4	.40	.24	.29
22	2.4	2.4	2.9	2.7	16	8.9	2.9	2.0	1.7	.40	.20	.26
23	2.4	2.5	3.0	2.5	14	9.7	2.4	1.9	1.4	.32	.18	.29
24	2.4	2.5	3.2	2.5	13	6.0	4.5	2.0	1.3	.29	.36	.29
25	2.5	2.5	4.2	2.3	12	5.2	2.7	4.5	1.3	.26	.32	.29
26	2.9	2.4	5.2	2.4	8.9	15	2.7	3.8	1.3	.24	.36	.32
27	2.9	2.4	5.2	2.5	7.4	14	2.7	2.5	1.9	.20	.36	.32
28	2.7	2.4	4.9	2.5	6.2	12	2.9	2.7	2.0	.20	.36	.32
29	2.7	2.4	4.7	2.4	---	7.1	3.0	2.5	2.0	.24	.36	.36
30	2.5	2.4	4.5	2.5	---	6.5	2.9	2.4	1.7	.24	.32	.36
31	2.4	---	4.2	1.9	---	5.7	---	2.4	---	.26	.32	---
TOTAL	81.9	73.7	93.2	90.0	220.3	221.1	109.4	65.3	63.1	24.29	7.30	10.00
MEAN	2.64	2.46	3.01	2.90	7.87	7.13	3.65	2.11	2.10	.78	.24	.33
MAX	3.0	3.0	5.2	4.0	24	15	5.7	4.5	3.0	1.7	.36	.40
MIN	2.4	2.3	1.4	1.9	1.5	4.5	2.4	1.4	1.3	.20	.13	.26
AC-FT	162	146	185	179	437	439	217	130	125	48	14	20

CAL YR 1980 TOTAL 2206.10 MEAN 6.03 MAX 64 MIN 1.2 AC-FT 4380
WTR YR 1981 TOTAL 1059.59 MEAN 2.90 MAX 24 MIN .13 AC-FT 2100

14080400 PRINEVILLE RESERVOIR NEAR PRINEVILLE, OR

LOCATION.--Lat 44°06'50", long 120°46'50", in SW¼NW¼ sec.11, T.17 S., R.16 E., Crook County, Hydrologic Unit 17070304, at right end of Prineville Dam on Crooked River, 13.8 mi (22.2 km) south of Prineville, and at mile 72.5 (116.7 km).

DRAINAGE AREA.--2,700 mi² (6,990 km²) approximately, of which 500 mi² (1,300 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Aug. 13, 1969, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam with ungated concrete spillway and concrete outlet tunnel controlled by two 4-ft (1.2 m) by 6-ft (1.8 m) regulating gates. Storage began in December 1960. Total capacity at elevation 3,234.80 ft (985.967 m), crest of spillway, is 154,700 acre-ft (191 hm³), of which 152,800 acre-ft (188 hm³) is active storage above 3,114.00 ft (949.147 m), proposed minimum pool. Reservoir used for flood control, irrigation, and recreation. Figures given herein represent active storage.

COOPERATION.--Gage inspected and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 165,800 acre-ft (204 hm³) Dec. 27, 1964, elevation, 3,238.95 ft (987.232 m); minimum observed, 37,400 acre-ft (46.1 hm³) Oct. 31, Nov. 1, 1977, elevation, 3,177.40 ft (986.472 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 160,700 acre-ft (198 hm³) Apr. 27, 28, elevation, 3,237.35 ft (986.744 m); minimum, 93,120 acre-ft (115 hm³) Dec. 12-15, elevation, 3,211.32 ft (978.810 m).

Capacity table (elevation, in feet, and usable contents, in acre-feet)

3,175	34,600	3,210	90,400
3,180	40,600	3,215	101,100
3,185	47,400	3,220	112,600
3,190	54,700	3,230	138,700
3,195	62,600	3,235	153,400
3,200	71,200	3,239	165,900
3,205	80,400		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3216.72	3213.02	3211.58	3214.06	3213.60	3227.52	3235.75	3237.00	3236.00	3233.01	3226.83	3219.80
2	3216.57	3213.00	3211.58	3214.10	3213.62	3227.76	3235.55	3236.90	3235.84	3232.85	3226.57	3219.60
3	3216.43	3212.96	3211.58	3214.10	3213.70	3228.14	3235.41	3236.82	3235.78	3232.65	3226.35	3219.45
4	3216.30	3212.92	3211.62	3214.10	3213.80	3228.44	3235.41	3236.64	3235.68	3232.45	3226.15	3219.23
5	3216.20	3212.92	3211.78	3214.00	3213.90	3228.74	3235.37	3236.64	3235.58	3232.23	3225.95	3219.15
6	3216.08	3212.84	3211.78	3213.70	3214.00	3229.04	3235.33	3236.64	3235.44	3232.03	3225.80	3219.00
7	3215.96	3212.82	3211.78	3213.40	3214.10	3229.24	3235.35	3236.64	3235.32	3231.85	3225.60	3218.85
8	3215.80	3212.74	3211.78	3213.00	3214.18	3229.46	3235.43	3236.56	3235.24	3231.65	3225.33	3218.65
9	3215.60	3212.67	3211.58	3212.68	3214.26	3229.74	3235.51	3236.57	3235.20	3231.50	3225.15	3218.45
10	3215.50	3212.60	3211.48	3212.32	3214.36	3229.90	3235.60	3236.57	3235.20	3231.27	3225.00	3218.25
11	3215.40	3212.52	3211.42	3212.00	3214.44	3229.97	3235.65	3236.50	3235.18	3231.10	3224.85	3217.95
12	3215.30	3212.40	3211.32	3211.76	3214.50	3230.15	3235.75	3236.40	3235.10	3230.95	3224.50	3217.83
13	3215.16	3212.32	3211.32	3211.80	3214.60	3230.50	3235.77	3236.30	3235.02	3230.75	3224.30	3217.60
14	3215.00	3212.16	3211.52	3211.98	3214.78	3230.75	3235.95	3236.18	3235.00	3230.65	3224.15	3217.40
15	3214.90	3212.14	3211.32	3212.00	3215.20	3231.15	3236.00	3236.00	3234.92	3230.53	3223.90	3217.25
16	3214.75	3212.12	3211.38	3212.10	3216.60	3231.47	3236.15	3235.88	3234.80	3230.35	3223.67	3217.00
17	3214.60	3211.98	3211.38	3212.10	3219.20	3231.77	3236.25	3235.80	3234.72	3230.03	3223.50	3216.85
18	3214.50	3211.88	3211.38	3212.10	3220.60	3232.05	3236.35	3235.80	3234.62	3229.83	3223.25	3216.63
19	3214.36	3211.72	3211.38	3212.14	3223.64	3232.30	3236.55	3235.80	3234.52	3229.65	3223.03	3216.40
20	3214.26	3211.54	3211.38	3212.22	3225.44	3232.55	3237.07	3235.80	---	3229.43	3222.75	3216.21
21	3214.10	3211.46	3211.40	3212.30	3226.26	3232.87	3237.25	3235.80	---	3229.17	3222.45	3216.00
22	3214.00	3211.46	3211.42	3212.38	3226.62	3233.23	3237.30	3235.85	---	3229.00	3222.15	3215.87
23	3213.98	3211.46	3211.64	3212.54	3226.84	3233.75	3237.31	3235.86	---	3228.80	3221.95	3215.70
24	3213.88	3211.48	3211.82	3212.70	3226.84	3234.25	3237.27	3235.86	---	3228.55	3221.75	3215.53
25	3213.72	3211.48	3212.88	3212.85	3226.84	3234.80	3237.30	3235.88	3233.85	3228.35	3221.55	3215.25
26	3213.64	3211.52	3214.62	3212.95	3226.90	3235.85	3237.33	3236.00	3233.77	3228.20	3221.20	3215.15
27	3213.52	3211.52	3215.22	3213.08	3227.14	3236.30	3237.35	3236.08	3233.61	3228.05	3220.95	3215.00
28	3213.42	3211.52	3215.22	3213.14	3227.32	3236.30	3237.27	3236.08	3233.53	3227.85	3220.67	3214.80
29	3213.32	3211.54	3215.08	3213.30	---	3236.20	3237.15	3236.10	3233.35	3227.57	3220.45	3214.65
30	3213.17	3211.58	3214.30	3213.40	---	3236.07	3237.02	3236.10	3233.17	3227.33	3220.20	3214.53
31	3213.10	---	3214.00	3213.52	---	3235.80	---	3236.00	---	3227.10	3220.00	---
MEAN	3214.81	3212.14	3212.19	3212.83	3219.05	3231.81	3236.29	3236.23	---	3230.15	3223.55	3217.13
MAX	3216.72	3213.02	3215.22	3214.10	3227.32	3236.30	3237.35	3237.00	---	3233.01	3226.83	3219.80
MIN	3213.10	3211.46	3211.32	3211.76	3213.60	3227.52	3235.33	3235.80	---	3227.10	3220.00	3214.53
(†)	96910	95670	98860	97820	131300	155900	159700	156500	147900	130700	112600	100000
(‡)	-8390	-3240	+5190	-1040	+33480	+24600	+3800	-3200	-8600	-17200	-18100	-12600

† Contents in acre-feet, at 2400, on last day of month.
‡ Change in contents, in acre-feet.

14080500 CROOKED RIVER NEAR PRINEVILLE, OR

LOCATION.--Lat 44°06'50", long 120°47'40", in SW¼NE¼ sec.10, T.17 S., R.16 E., Crook County, Hydrologic Unit 17070304, on right bank 0.4 mi (0.6 km) downstream from Prineville Dam, 13.6 mi (21.9 km) south of Prineville, and at mile 72.1 (116.0 km).

DRAINAGE AREA.--2,700 mi² (7,000 km²), approximately, of which 500 mi² (1,300 km²) is probably noncontributing.

PERIOD OF RECORD.--November 1908 to September 1914, March 1941 to current year. Published as "near Prineville" 1908-12, as "at Hoffman's ranch, near Prineville" 1913-14, and as "above Hoffman Dam, near Prineville" March 1941 to September 1960. The estimate of monthly mean discharge for October 1908, published in WSP 370, has been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1448: 1909-13, 1914(M), drainage area (at sites prior to Apr. 24, 1961). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 3,070.85 ft (935.995 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to September 1914, nonrecording gage at several sites from 9 mi (14 km) to 23 mi (37 km) downstream at various datums. Mar. 26, 1941, to Apr. 23, 1961, water-stage recorder at site 5.5 mi (8.8 km) downstream at different datum.

REMARKS.--Records good. Flow completely regulated since December 1960 by Prineville Reservoir (see station 14080400). Diversions for irrigation above station. Discharge not adjusted for storage or release from Prineville Reservoir as evaporation from reservoir at times exceeds natural flow.

AVERAGE DISCHARGE.--24 years (water years 1910-14, 1942-60), 378 ft³/s (10.70 m³/s), 273,700 acre-ft/yr (337 hm³/yr); 21 years (water years 1961-81), 311 ft³/s (8.808 m³/s), 225,300 acre-ft/yr (278 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,410 ft³/s (238 m³/s) Mar. 26, 1952, gage height, 8.2 ft (2.50 m), from floodmark, site and datum then in use; no flow Aug. 13-21, 1959, Jan. 3-5, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,350 ft³/s (38.2 m³/s) Mar. 27, gage height, 5.86 ft (1.786 m); minimum, 3.1 ft³/s (0.088 m³/s) Jan. 16.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	184	116	108	249	52	128	930	616	329	251	281	249
2	184	116	108	249	52	98	925	483	319	251	281	214
3	184	116	108	249	52	52	835	476	311	274	279	214
4	184	116	108	249	38	52	604	393	301	288	279	214
5	184	116	128	411	26	52	600	283	295	288	279	214
6	184	116	173	568	26	52	490	283	286	288	279	212
7	184	148	173	568	26	52	303	281	276	276	279	212
8	182	182	173	564	26	52	269	279	272	256	279	210
9	182	182	173	564	26	53	237	274	267	256	279	212
10	182	182	173	564	26	53	210	269	267	269	279	212
11	182	182	173	564	26	53	195	296	267	286	276	212
12	182	182	139	258	26	53	205	314	265	286	276	212
13	182	182	79	11	26	53	212	303	263	286	276	212
14	182	182	79	12	26	53	220	298	258	286	276	212
15	182	182	79	12	26	54	226	293	256	286	276	212
16	182	180	77	30	26	54	231	281	253	286	276	212
17	182	180	80	51	33	54	244	276	251	286	276	212
18	182	180	80	51	66	61	258	298	251	283	274	212
19	182	180	89	51	88	71	281	316	251	283	274	212
20	182	180	94	51	89	71	393	319	251	283	274	212
21	182	119	95	51	301	71	660	327	251	283	274	206
22	110	77	95	51	564	71	765	329	251	283	274	201
23	105	77	95	51	636	72	845	327	251	281	272	201
24	195	77	95	51	765	72	840	322	251	281	272	201
25	197	77	95	51	765	143	750	322	251	281	272	195
26	197	77	96	51	493	291	755	338	251	281	272	191
27	197	77	390	52	263	925	825	352	251	281	272	191
28	195	77	855	52	222	1340	850	354	251	281	272	191
29	195	77	990	52	---	1320	825	352	251	281	272	191
30	195	89	1120	52	---	1300	800	343	251	281	269	186
31	154	---	652	52	---	1070	---	335	---	281	269	---
TOTAL	5576	4024	6972	5892	4791	7896	15783	10332	7997	8643	8538	6237
MEAN	180	134	225	190	171	255	526	333	267	279	275	208
MAX	197	182	1120	568	765	1340	930	616	329	288	281	249
MIN	105	77	77	11	26	52	195	269	251	251	269	186
AC-FT	11060	7980	13830	11690	9500	15660	31310	20490	15860	17140	16940	12370

CAL YR 1980 TOTAL 130427 MEAN 356 MAX 1730 MIN 77 AC-FT 258700
WTR YR 1981 TOTAL 92681 MEAN 254 MAX 1340 MIN 11 AC-FT 183800

14087400 CROOKED RIVER BELOW OPAL SPRINGS, NEAR CULVER, OR

LOCATION.--Lat 44°29'33", long 121°17'50", in NW¼NE¼ sec.33, T.12 S., R.12 E., Jefferson County, Hydrologic Unit 17070305, on right bank 0.2 mi (0.3 km) downstream from Opal Springs, 4.8 mi (7.7 km) southwest of Culver, and at mile 6.7 (10.8 km).

DRAINAGE AREA.--4,300 mi² (11,100 km²), approximately, of which 500 mi² (1,300 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,953.60 ft (595.457 m) National Geodetic Vertical Datum of 1929 (Portland General Electric Co. bench mark).

REMARKS.--Records good. Flow regulated since December 1960 by Prineville Reservoir (see station 14080400) and Ochoco Reservoir, capacity, 47,500 acre-ft (58.6 hm³). Many diversions for irrigation above station. Practically all of the summer flow comes from Opal Springs and other springs within 15 mi (24 km) above station. Simultaneous records (1961-63) at former gaging station 5.6 mi (9.0 km) downstream indicated over 15 percent increase to summer flow from springs below this station.

AVERAGE DISCHARGE.--20 years, 1,543 ft³/s (43.70 m³/s), 1,118,000 acre-ft/yr (1.38 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,660 ft³/s (189 m³/s) Dec. 24, 1964, gage height, 9.36 ft (2.853 m); minimum, 836 ft³/s (23.7 m³/s) Sept. 8, 1981, caused by refilling of small forebay upstream from gage.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,730 ft³/s (77.3 m³/s) Mar. 30, gage height, 4.71 ft (1.436 m); minimum, 836 ft³/s (23.7 m³/s) Sept. 8, caused by refilling of small forebay upstream from gage; minimum daily, 1,090 ft³/s (30.9 m³/s) May 11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1180	1430	1310	1840	1230	1520	2320	1860	1250	1110	1160	1160
2	1210	1370	1350	1510	1220	1380	2290	1680	1220	1110	1190	1160
3	1160	1360	1350	1500	1230	1360	2290	1550	1180	1110	1200	1140
4	1160	1360	1330	1490	1230	1280	2150	1510	1180	1110	1180	1120
5	1160	1360	1330	1490	1230	1270	1960	1370	1170	1130	1170	1110
6	1160	1360	1330	1660	1210	1260	1950	1190	1200	1130	1170	1120
7	1150	1370	1390	1820	1200	1250	1810	1170	1290	1150	1160	1130
8	1160	1390	1390	1830	1190	1250	1640	1140	1370	1180	1140	1130
9	1140	1430	1400	1820	1190	1240	1590	1120	1480	1130	1140	1110
10	1150	1430	1400	1820	1190	1240	1550	1100	1490	1120	1160	1110
11	1160	1430	1400	1820	1190	1270	1530	1090	1460	1120	1150	1110
12	1170	1430	1400	1820	1190	1270	1490	1100	1420	1140	1120	1110
13	1190	1420	1390	1570	1190	1270	1500	1110	1400	1140	1100	1120
14	1220	1430	1290	1270	1190	1260	1530	1110	1400	1130	1110	1120
15	1310	1420	1280	1240	1310	1230	1530	1110	1380	1110	1120	1110
16	1670	1420	1290	1230	1310	1240	1500	1110	1300	1110	1130	1100
17	1490	1420	1300	1230	1580	1240	1460	1120	1200	1110	1130	1110
18	1470	1420	1310	1220	1460	1240	1460	1150	1170	1100	1130	1110
19	1460	1420	1310	1230	1590	1260	1440	1390	1150	1100	1110	1110
20	1460	1420	1300	1260	1550	1290	1430	1420	1150	1100	1110	1150
21	1450	1420	1310	1230	1440	1310	1730	1270	1130	1110	1120	1180
22	1440	1390	1310	1240	1590	1300	1990	1250	1220	1150	1140	1230
23	1420	1300	1290	1250	1890	1290	1860	1260	1170	1100	1140	1340
24	1360	1290	1300	1240	1970	1290	1930	1250	1200	1110	1170	1340
25	1600	1290	1320	1240	2070	1290	1860	1310	1200	1120	1180	1350
26	1480	1300	1340	1230	2070	1360	1820	1440	1170	1110	1170	1330
27	1470	1310	1330	1240	1780	1600	1860	1440	1140	1130	1130	1430
28	1450	1300	1580	1240	1560	2320	1970	1370	1130	1130	1140	1450
29	1450	1320	2100	1230	---	2640	2040	1270	1140	1130	1160	1430
30	1460	1310	2290	1230	---	2620	1970	1250	1130	1130	1160	1440
31	1460	---	2380	1230	---	2600	---	1250	---	1120	1160	---
TOTAL	41270	41320	44400	44270	40050	45240	53450	39760	37490	34780	35550	35960
MEAN	1331	1377	1432	1428	1430	1459	1782	1283	1250	1122	1147	1199
MAX	1670	1430	2380	1840	2070	2640	2320	1860	1490	1180	1200	1450
MIN	1140	1290	1280	1220	1190	1230	1430	1090	1130	1100	1100	1100
AC-FT	81860	81960	88070	87810	79440	89730	106000	78860	74360	68990	70510	71330

CAL YR 1980 TOTAL 548250 MEAN 1498 MAX 3410 MIN 1100 AC-FT 1087000
WTR YR 1981 TOTAL 493540 MEAN 1352 MAX 2640 MIN 1090 AC-FT 978900

14088000 LAKE CREEK NEAR SISTERS, OR

LOCATION.--Lat 44°25'35", long 121°43'30", in NE¼SW¼ sec.24, T.13 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, on left bank 300 ft (91 m) downstream from Suttle Lake and 13 mi (21 km) northwest of Sisters.

DRAINAGE AREA.--22.2 mi^2 (57.5 km^2).

PERIOD OF RECORD.--June to November 1911, March to September 1912, May to October 1913, April 1915 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1124: 1943, 1947. WSP 1218: Drainage area. WSP 1448: 1916(M), 1925.

GAGE.--Water-stage recorder. Datum of gage is 3,431.68 ft (1,045.976 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 1, 1916, nonrecording gage at two sites 400 ft (122 m) upstream at different datums. Apr. 1, 1916, to Oct. 12, 1928, nonrecording gage or water-stage recorder at site 640 ft (195 m) downstream at different datum. Oct. 13, 1928, to Aug. 13, 1967, water-stage recorder at site 600 ft (183 m) downstream at datum 1.61 ft (0.491 m) lower.

REMARKS.--Records excellent. No regulation or diversion above station.

AVERAGE DISCHARGE.--66 years (water years 1916-81), 52.4 ft^3/s (1.484 m^3/s), 37,960 acre-ft/yr (46.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded discharge, 446 ft^3/s (12.6 m^3/s), revised, Dec. 15, 1977, gage height, 4.78 ft (1.457 m), but may have been higher during period of no gage-height record Dec. 23, 1964; minimum, 1.0 ft^3/s (0.028 m^3/s) Nov. 4, 5, 1940; minimum daily, 8 ft^3/s (0.23 m^3/s) Nov. 5, 1940, Oct. 6, 1942.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 316 ft^3/s (8.95 m^3/s) Dec. 27, gage height, 4.20 ft (1.280 m); minimum, 22 ft^3/s (0.62 m^3/s) Aug. 26.

REVISIONS.--Maximum discharges for the water years 1974 and 1978 have been revised to 322 ft^3/s (9.12 m^3/s) Jan. 18, 1974, gage height, 4.23 ft (1.289 m), and 446 ft^3/s (12.6 m^3/s) Dec. 15, 1977, gage height, 4.78 ft (1.457 m), respectively, superseding figures published in the reports for 1974 and 1978.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	27	32	133	40	75	50	50	47	33	26	23
2	25	27	55	120	40	71	48	53	47	34	27	23
3	25	26	65	107	40	69	49	54	47	32	25	25
4	25	27	63	95	39	67	48	54	47	32	26	25
5	24	30	79	85	40	63	49	54	45	34	25	25
6	24	34	90	78	39	60	46	54	45	36	26	25
7	25	57	85	73	38	61	45	52	49	34	26	25
8	24	62	78	68	37	59	46	51	56	32	27	25
9	23	47	70	65	37	57	48	50	57	31	26	25
10	24	43	62	61	37	55	45	48	66	31	26	24
11	24	40	55	59	38	53	49	46	63	31	26	25
12	25	41	50	57	38	53	52	45	60	32	27	25
13	26	37	47	54	39	53	47	44	56	31	27	25
14	25	32	45	52	44	50	45	45	52	30	26	24
15	25	30	43	52	43	50	45	48	50	30	26	25
16	24	28	41	50	60	52	45	48	50	31	26	25
17	24	27	40	49	61	50	43	48	48	30	25	25
18	23	27	40	48	81	48	34	48	47	29	25	26
19	24	27	39	47	111	52	35	48	45	28	26	25
20	24	27	39	47	145	50	39	48	42	28	25	25
21	23	34	45	48	138	49	43	46	41	28	25	27
22	23	38	62	46	122	51	45	44	41	28	25	27
23	23	34	58	46	115	48	45	44	40	27	27	25
24	24	31	82	46	115	48	47	44	37	26	25	25
25	24	29	139	43	104	50	47	44	38	27	24	25
26	25	28	227	48	95	49	50	44	37	28	24	27
27	26	29	308	51	88	48	49	44	36	28	23	38
28	25	30	286	50	80	47	49	44	36	28	25	37
29	25	37	232	47	---	51	49	44	36	27	25	31
30	25	37	179	45	---	52	49	46	36	26	25	27
31	25	---	146	43	---	52	---	47	---	27	24	---
TOTAL	756	1023	2882	1913	1904	1693	1381	1479	1397	929	791	784
MEAN	24.4	34.1	93.0	61.7	68.0	54.6	46.0	47.7	46.6	30.0	25.5	26.1
MAX	26	62	308	133	145	75	52	54	66	36	27	38
MIN	23	26	32	43	37	47	34	44	36	26	23	23
AC-FT	1500	2030	5720	3790	3780	3360	2740	2930	2770	1840	1570	1560

CAL YR 1980 TOTAL 17598 MEAN 48.1 MAX 308 MIN 23 AC-FT 34910
WTR YR 1981 TOTAL 16932 MEAN 46.4 MAX 308 MIN 23 AC-FT 33580

NOTE.--No gage-height record Apr. 29 to June 15.

14091500 METOLIUS RIVER NEAR GRANDVIEW, OR

LOCATION.--Lat 44°37'33", long 121°28'55", in SE¼SW¼ sec.12, T.11 S., R.10 E., Jefferson County, Hydrologic Unit 17070301, Deschutes National Forest, on right bank 1.0 mi (1.6 km) upstream from maximum controlled pool of Lake Billy Chinook, 15.0 mi (24.1 km) northwest of Culver, and at mile 13.6 (21.9 km).

DRAINAGE AREA.--316 mi² (818 km²), at cableway 1.0 mi (1.6 km) downstream, where all discharge measurements are made. Hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--April 1910 to February 1912 (gage heights and discharge measurements only), March 1912 to December 1913, October 1921 to current year. Published as "at Hubbard's ranch, near Sisters" 1910, and as "at Hubbard's ranch, near Grandview" 1910-13.

REVISED RECORDS.--WSP 1448: 1913.

GAGE.--Water-stage recorder. Datum of gage is 1,974.36 ft (601.785 m) National Geodetic Vertical Datum of 1929 (levels by Portland General Electric Co.). Prior to Dec. 31, 1913, nonrecording gage at site 2.3 mi (3.7 km) upstream at different datum. Oct. 1, 1921, to May 3, 1949, nonrecording gage and May 4, 1949, to June 18, 1963, water-stage recorder at site 2.7 mi (4.3 km) downstream at datum 64 ft (19.5 m) lower.

REMARKS.--Records excellent. No regulation. Many small diversions for irrigation above station. Stream is spring fed. Records herein are for measuring site.

AVERAGE DISCHARGE.--61 years (water years 1913, 1922-81), 1,491 ft³/s (42.23 m³/s), 1,080,000 acre-ft/yr (1.33 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,530 ft³/s (213 m³/s) Dec. 24, 1964, gage height, 6.81 ft (2.076 m); minimum, 1,080 ft³/s (30.6 m³/s) Feb. 17, 1932, Oct. 2-31, Nov. 6, 7, 10-14, 1942.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,510 ft³/s (128 m³/s) Dec. 25, gage height, 4.59 ft (1.399 m); minimum, 1,210 ft³/s (34.3 m³/s) Oct. 16 to Nov. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1240	1230	1270	1790	1360	1690	1410	1470	1360	1380	1290	1280
2	1240	1250	1640	1720	1360	1660	1410	1430	1360	1360	1290	1260
3	1250	1230	1950	1670	1360	1650	1400	1400	1360	1360	1290	1250
4	1240	1230	1660	1620	1350	1620	1390	1380	1400	1370	1280	1260
5	1240	1230	1510	1590	1350	1580	1390	1370	1410	1400	1280	1250
6	1240	1280	1470	1560	1340	1570	1390	1360	1450	1390	1280	1250
7	1240	1530	1410	1540	1330	1560	1380	1350	1450	1380	1290	1260
8	1240	1500	1390	1510	1330	1540	1380	1340	1950	1360	1300	1260
9	1230	1340	1380	1490	1330	1520	1380	1340	1890	1340	1300	1270
10	1230	1290	1360	1480	1320	1510	1370	1340	1610	1330	1300	1250
11	1230	1270	1350	1460	1320	1510	1380	1340	1530	1330	1300	1250
12	1250	1250	1330	1440	1330	1500	1390	1330	1500	1330	1300	1250
13	1240	1250	1320	1430	1360	1490	1360	1330	1490	1330	1300	1250
14	1230	1250	1310	1420	1480	1480	1360	1340	1460	1320	1300	1250
15	1230	1240	1310	1410	1440	1480	1360	1350	1440	1320	1300	1250
16	1230	1230	1310	1410	1880	1470	1360	1330	1440	1320	1290	1250
17	1220	1230	1310	1410	1940	1450	1360	1330	1430	1320	1280	1250
18	1220	1230	1310	1400	2190	1450	1350	1390	1420	1320	1280	1270
19	1220	1230	1300	1390	2600	1470	1350	1390	1510	1310	1280	1260
20	1220	1230	1300	1390	2190	1460	1350	1360	1480	1310	1280	1250
21	1220	1300	1400	1420	2040	1450	1360	1360	1430	1310	1270	1250
22	1210	1430	1790	1410	1940	1460	1380	1350	1420	1300	1270	1250
23	1220	1300	1620	1410	1890	1440	1400	1360	1410	1300	1280	1240
24	1220	1270	1840	1390	1930	1430	1430	1400	1390	1300	1280	1230
25	1220	1250	3580	1390	1850	1440	1390	1480	1390	1300	1270	1230
26	1230	1250	3410	1410	1810	1430	1380	1430	1400	1300	1260	1270
27	1230	1250	2670	1420	1750	1410	1370	1390	1390	1300	1260	1380
28	1220	1280	2320	1410	1730	1410	1380	1380	1370	1310	1260	1310
29	1220	1300	2090	1390	---	1430	1410	1380	1360	1300	1260	1260
30	1220	1280	2040	1370	---	1430	1430	1400	1380	1300	1260	1250
31	1220	---	1890	1360	---	1430	---	1370	---	1290	1260	---
TOTAL	38110	38430	52840	45510	46100	46420	41450	42570	43880	41190	39740	37790
MEAN	1229	1281	1705	1468	1646	1497	1382	1373	1463	1329	1282	1260
MAX	1250	1530	3580	1790	2600	1690	1430	1480	1950	1400	1300	1380
MIN	1210	1230	1270	1360	1320	1410	1350	1330	1360	1290	1260	1230
AC-FT	75590	76230	104800	90270	91440	92070	82220	84440	87040	81700	78820	74960

CAL YR 1980 TOTAL 508470 MEAN 1389 MAX 3580 MIN 1200 AC-FT 1009000
WTR YR 1981 TOTAL 514030 MEAN 1408 MAX 3580 MIN 1210 AC-FT 1020000

14092100 LAKE BILLY CHINOOK NEAR METOLIUS, OR

LOCATION.--Lat 44°36'14", long 121°16'40", in SW¼NE¼ sec.22, T.11 S., R.12 E., Jefferson County, Hydrologic Unit 17070301, Warm Springs Indian Reservation, near left end of Round Butte Dam on Deschutes River, 5.0 mi (8.0 km) west of Metolius, and at mile 110.6 (178.0 km).

DRAINAGE AREA.--7,490 mi² (19,400 km²), approximately.

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

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Portland General Electric Co.).

REMARKS.--Reservoir is formed by rock fill dam completed in June 1964 by Portland General Electric Co.; storage began Jan. 2, 1964. Total capacity is 534,700 acre-ft (659 hm³) at elevation 1,945.0 ft (592.84 m) proposed upper limit of operation, and usable capacity is 273,900 acre-ft (337 hm³) between elevations 1,860.0 ft (566.93 m), proposed lower limit of operation, and 1,945.0 ft (592.84 m). Reservoir used for power generation under FPC license 2030. Figures given herein represent total contents.

COOPERATION.--Gage readings and capacity tables furnished by Portland General Electric co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 538,700 acre-ft (664 hm³) July 15, 16, 1972, elevation, 1,946.00 ft (593.141 m); minimum observed since first filling, 431,100 acre-ft (531 hm³) Feb. 13, 1972, elevation, 1,917.13 ft (584.341 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 535,200 acre-ft (660 hm³) June 8, elevation, 1,945.12 ft (592.873 m); minimum observed, 494,500 acre-ft (610 hm³) Feb. 15, elevation, 1,934.54 ft (589.648 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,944.42	532,400	-
Oct. 31	1,944.70	533,600	+1,200
Nov. 30	1,943.75	529,800	-3,800
Dec. 31	1,943.81	530,000	+200
CAL YR 1980	-	-	-1,900
Jan. 31	1,943.35	528,200	-1,800
Feb. 28	1,942.21	523,800	-4,400
Mar. 31	1,943.52	528,900	+5,100
Apr. 30	1,943.99	530,700	+1,800
May 31	1,944.45	532,600	+1,900
June 30	1,944.29	531,900	-700
July 31	1,944.05	531,000	-900
Aug. 31	1,944.28	531,900	+900
Sept.30	1,944.56	533,000	+1,100
WTR YR 1981	-	-	+600

14092500 DESCHUTES RIVER NEAR MADRAS, OR

LOCATION.--Lat 44°43'34", long 121°14'45", in SE¼SW¼ sec.1, T.10 S., R.12 E., Jefferson County, Hydrologic Unit 17070306, on right bank 400 ft (122 m) downstream from reregulating dam, 2.7 mi (4.3 km) downstream from Pelton Dam, 8.5 mi (13.7 km) northwest of Madras, and at mile 100.1 (161.1 km).

DRAINAGE AREA.--7,820 mi² (20,250 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to current year.

REVISED RECORDS.--WSP 1398: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,390.25 ft (423.748 m) National Geodetic Vertical Datum of 1929 (levels by Portland General Electric Co.). See WSP 1738 for history of changes prior to Nov. 23, 1957.

REMARKS.--Water-discharge records excellent. Diurnal fluctuation caused by Lake Simtustus and reregulating reservoir since 1957, combined capacity for normal operation, 6,500 acre-ft (8.01 hm³). Some winter and spring runoff stored in Ochoco Reservoir, capacity, 47,500 acre-ft (58.6 hm³), in Crescent Lake, Crane Prairie and Wickiup Reservoirs, combined capacity, 354,600 acre-ft (437 hm³), and since 1960, in Prineville Reservoir, capacity, 152,800 acre-ft (188 hm³), and since 1964, in Lake Billy Chinook, capacity, 534,700 acre-ft (659 hm³). Large diversions in upper basin for irrigation.

AVERAGE DISCHARGE.--58 years, 4,479 ft³/s (126.8 m³/s), 3,245,000 acre-ft/yr (4.00 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,800 ft³/s (447 m³/s) Dec. 28, 1964, gage height, 6.29 ft (1.917 m); maximum gage height, 6.89 ft (2.100 m) Jan. 1, 1943, site and datum then in use; minimum discharge, 1,200 ft³/s (34.0 m³/s) Dec. 13, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,720 ft³/s (190 m³/s) Feb. 9, gage height, 3.84 ft (1.170 m); minimum, 3,020 ft³/s (85.5 m³/s) Jan. 23, 24.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3920	4400	4230	5320	5820	5770	5990	4550	4040	3920	3850	3690
2	3870	4400	4010	5770	5820	5350	6140	4580	3900	3780	3870	3730
3	3940	4530	4550	6160	5850	5190	5960	4580	3760	3730	3660	3710
4	3920	4710	5540	5630	5960	5110	5850	4580	3760	3760	3550	3690
5	3900	4530	5570	5290	5880	5000	5880	4550	3920	3710	3550	3660
6	3900	4710	5570	5320	5910	4890	5460	4430	4040	3710	3620	3660
7	3920	4600	5540	5400	5880	4760	5000	4200	4060	3710	3570	3710
8	3780	4400	5460	4920	5880	4760	4890	3940	4650	3690	3730	3730
9	3760	4400	5490	4550	6110	4790	4660	3850	5320	3710	3900	3730
10	3760	5270	5110	4530	5880	4840	4550	3850	5460	3800	3920	3730
11	3730	5630	5160	4550	5850	4790	4550	3850	4940	4040	3870	3730
12	3690	5210	5520	4870	5770	4760	4550	3850	4160	4040	3850	3690
13	3690	4870	5540	5430	5020	4760	4500	3660	3760	4040	3900	3690
14	3660	4600	5540	5350	5050	4760	4200	3550	3800	3830	3870	3710
15	3730	4430	5570	5130	5000	4760	4010	3780	3920	3710	3870	3660
16	3730	4430	5600	5350	4330	4550	3850	3900	4200	3660	3870	3660
17	3710	4400	5660	5630	4480	4300	3780	3920	4450	3710	3920	3690
18	3710	4400	5570	4760	4530	4350	3780	3920	4180	3730	3870	3660
19	3730	4400	5600	4580	3990	4110	3800	4040	3870	3730	3900	3660
20	3780	4400	5600	4710	4010	3800	3800	4130	3850	3710	3940	3690
21	3780	4130	5630	5080	4060	3780	3830	4130	3850	3710	3940	3690
22	3760	3730	5160	4380	4040	3780	3850	3970	3920	3690	3940	3690
23	3830	3760	4870	3690	4060	4130	3850	3570	4060	3660	3940	3660
24	3990	4110	4530	3150	4480	4550	4250	3550	4040	3710	3850	3690
25	4010	4380	3990	3170	5290	4810	4600	3550	4040	3690	3710	3800
26	4300	4380	4630	3760	6140	5050	4580	3850	4060	3690	3710	3920
27	4380	4430	5380	4010	6450	5050	4600	4160	4060	3830	3730	4300
28	4400	4400	5380	4330	6370	5080	4580	4160	4040	4130	3710	4450
29	4430	4380	5320	4760	---	5080	4550	4110	3920	4250	3690	4250
30	4430	4380	5350	5020	---	5320	4550	4080	3850	4040	3690	4060
31	4430	---	5290	5850	---	5850	---	4080	---	3940	3710	---
TOTAL	121570	134800	161960	150450	147910	147880	138440	124920	123860	118060	117700	113390
MEAN	3922	4493	5225	4853	5283	4770	4615	4030	4129	3808	3797	3780
MAX	4430	5630	5660	6160	6450	5850	6140	4580	5460	4250	3940	4450
MIN	3660	3730	3990	3150	3990	3780	3780	3550	3760	3660	3550	3660
AC-FT	241100	267400	321200	298400	293400	293300	274600	247800	245700	234200	233500	224900

CAL YR 1980 TOTAL 1636280 MEAN 4471 MAX 7760 MIN 3420 AC-FT 3246000
WTR YR 1981 TOTAL 1600940 MEAN 4386 MAX 6450 MIN 3150 AC-FT 3175000

14092500 DESCHUTES RIVER NEAR MADRAS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1971 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 18.0°C occurred during period Aug. 1 to Sept. 30, 1974; minimum, 3.5°C Feb. 8, 1979.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 14.5°C Sept. 16-18; minimum, 6.5°C Jan. 18, Feb. 3, 5, 7, 12, 13, 28, Mar. 4-6.

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

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13.5	13.0	12.0	11.5	9.5	9.5	8.0	7.5	8.0	7.0	7.5	7.0
2	13.5	12.5	11.5	11.5	9.5	9.0	8.0	8.0	7.5	7.0	8.0	7.0
3	13.5	13.0	11.5	11.5	9.5	9.5	8.0	7.5	7.5	6.5	7.5	7.0
4	13.5	12.5	11.5	11.5	9.5	9.5	8.0	7.5	8.0	7.0	7.5	6.5
5	13.5	13.0	11.5	11.5	9.5	9.5	7.5	7.5	7.5	6.5	8.0	6.5
6	13.5	13.0	11.5	11.5	9.5	9.0	7.5	7.5	7.5	7.0	7.5	6.5
7	13.5	12.5	11.5	11.5	9.5	9.0	8.0	7.0	7.5	6.5	7.5	7.0
8	13.5	12.5	11.5	11.5	9.0	9.0	8.0	7.0	7.5	7.0	7.5	7.0
9	13.5	12.5	11.5	11.5	9.0	8.5	7.5	7.0	7.5	7.0	8.0	7.0
10	13.5	12.5	11.5	11.0	8.5	8.5	7.5	7.5	7.5	7.0	7.5	7.0
11	13.5	12.5	11.0	11.0	8.5	8.5	7.5	7.5	7.0	7.0	8.0	7.0
12	13.5	13.0	11.0	11.0	8.5	8.5	7.5	7.0	7.0	6.5	8.0	7.0
13	13.5	12.5	11.0	10.5	8.5	8.5	7.5	7.5	7.5	6.5	8.0	7.0
14	13.0	12.5	10.5	10.5	8.5	8.0	7.5	7.0	7.5	7.5	8.0	7.0
15	13.5	12.5	10.5	10.5	8.5	8.0	7.5	7.0	7.5	7.0	7.5	7.5
16	13.0	12.5	10.5	10.5	8.0	8.0	7.0	7.0	7.5	7.5	8.0	7.0
17	13.0	12.5	10.5	10.5	8.5	8.0	7.5	7.0	7.5	7.5	8.0	7.0
18	13.0	12.5	10.5	10.0	8.0	8.0	8.0	6.5	7.5	7.5	8.0	7.0
19	12.5	12.5	10.5	10.0	8.0	8.0	7.5	7.0	7.5	7.5	8.0	7.0
20	12.5	12.0	10.5	10.0	8.0	7.5	7.5	7.5	7.5	7.0	8.0	7.0
21	12.5	12.0	10.5	10.0	8.0	7.5	7.5	7.5	7.5	7.0	8.0	7.0
22	12.5	12.0	10.0	10.0	8.0	8.0	7.5	7.5	7.5	7.0	8.0	7.0
23	12.5	12.0	10.0	10.0	8.0	7.5	7.5	7.5	7.5	7.0	8.0	7.0
24	12.0	12.0	10.0	10.0	8.0	8.0	8.0	7.5	7.5	7.5	8.0	7.0
25	12.0	11.5	10.0	10.0	8.5	8.0	7.5	7.5	8.0	7.5	8.0	7.5
26	12.0	12.0	10.0	10.0	8.5	8.5	8.0	7.5	7.5	7.0	8.0	7.5
27	12.0	12.0	10.0	10.0	8.5	8.5	7.5	7.0	7.5	7.0	8.5	8.0
28	12.0	11.5	10.0	10.0	8.5	8.0	7.5	7.0	7.5	6.5	8.5	8.0
29	12.0	11.5	10.0	9.5	8.5	8.0	8.0	7.0	---	---	8.5	7.5
30	12.0	11.5	9.5	9.5	8.0	7.5	8.0	7.0	---	---	8.5	8.0
31	11.5	11.5	---	---	8.0	7.5	7.5	7.0	---	---	8.0	7.0
MONTH	13.5	11.5	12.0	9.5	9.5	7.5	8.0	6.5	8.0	6.5	8.5	6.5

14092500 DESCHUTES RIVER NEAR MADRAS, OR--Continued

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

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.0	7.5	9.5	9.0	11.0	10.0	12.0	11.5	13.5	12.5	14.0	13.5
2	8.0	7.0	9.5	9.0	11.0	10.0	12.5	11.5	13.5	12.5	14.0	13.5
3	8.0	7.5	9.5	9.0	11.0	10.0	12.5	11.5	13.5	13.0	14.0	13.0
4	8.5	7.5	9.5	9.0	11.0	10.0	12.5	11.5	13.5	12.5	14.0	13.5
5	8.5	7.5	9.5	9.0	11.0	10.0	12.0	11.5	13.5	13.0	14.0	13.5
6	8.5	7.5	9.5	9.0	10.5	10.0	12.0	11.5	13.5	13.0	14.0	---
7	8.5	7.5	9.5	9.0	10.5	10.0	12.5	11.5	14.0	13.0	14.0	13.5
8	8.5	7.5	10.0	9.0	11.0	10.0	12.5	11.5	14.0	13.0	14.0	13.5
9	8.5	7.5	10.0	9.0	10.5	10.0	12.5	11.5	14.0	13.0	14.0	13.5
10	8.5	7.5	10.0	9.0	10.5	10.0	12.5	11.5	13.5	13.0	14.0	13.5
11	8.5	7.5	10.0	9.0	11.0	10.0	12.5	11.5	14.0	13.0	14.0	13.5
12	8.5	7.5	10.5	9.5	10.5	10.5	12.5	---	14.0	13.0	14.0	13.5
13	8.5	7.5	10.0	9.5	11.0	10.0	12.5	11.5	14.0	---	14.0	13.5
14	9.0	7.5	10.0	9.5	11.0	10.0	12.5	12.0	14.0	---	14.0	13.5
15	8.5	7.5	10.0	9.5	11.0	10.0	13.0	12.0	14.0	13.0	14.0	13.5
16	9.0	7.5	10.0	9.5	11.0	10.5	13.0	12.0	14.0	13.0	14.5	13.5
17	9.0	8.0	10.0	9.5	11.5	10.5	13.0	12.0	14.0	13.0	14.5	13.5
18	9.0	8.0	10.0	9.5	11.0	10.5	13.0	12.0	14.0	13.0	14.5	13.5
19	9.0	8.5	10.0	9.5	11.5	10.5	13.0	12.0	14.0	13.0	14.0	13.5
20	9.0	8.5	10.0	9.5	11.5	10.5	13.0	---	14.0	13.0	14.0	13.5
21	9.0	8.5	10.0	9.5	11.5	10.5	13.0	12.5	14.0	13.0	14.0	13.5
22	9.0	8.5	10.5	9.5	11.5	10.5	13.5	12.5	14.0	13.0	14.0	13.5
23	9.0	8.5	10.5	10.0	11.5	10.5	13.5	12.5	14.0	13.5	14.0	13.5
24	9.0	8.5	10.5	10.0	11.5	10.5	13.5	12.5	14.0	13.5	14.0	13.5
25	9.0	8.5	10.5	10.0	12.0	11.0	13.5	12.5	14.0	13.5	14.0	13.5
26	9.0	8.5	10.5	9.5	12.0	11.0	13.5	12.5	14.0	13.0	13.5	13.5
27	9.0	8.5	10.5	10.0	12.0	11.0	13.5	12.5	14.0	13.0	13.5	13.5
28	9.5	9.0	11.0	10.0	12.0	11.0	13.5	12.5	14.0	13.5	13.5	13.0
29	9.5	9.0	11.0	10.0	12.0	11.5	13.5	12.5	14.0	13.5	13.5	13.0
30	9.5	9.0	10.5	10.0	12.0	11.5	13.5	12.5	14.0	13.5	13.5	13.0
31	---	---	11.0	10.0	---	---	13.5	12.5	14.0	---	---	---
MONTH	9.5	7.0	11.0	9.0	12.0	10.0	13.5	11.5	14.0	12.5	14.5	13.0

14092885 SHITIKE CREEK BELOW WOLFORD CANYON, NEAR WARM SPRINGS, OR

LOCATION.--Lat 44°46'20", long 121°18'15", in NW¼SE¼ sec.21, T.9 S., R.12 E., Jefferson County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on left bank at bridge crossing 2.3 mi (3.7 km) upstream from Tenino Creek, and 2.1 mi (3.4 km) northwest of Warm Springs.

DRAINAGE AREA.--75.8 mi^2 (196.3 km^2).

PERIOD OF RECORD.--October 1974 to current year. Records for June 1911 to October 1916, April 1923 to September 1928, and October 1972 to September 1974 (see station 14093000) at sites downstream not equivalent owing to difference in drainage areas.

GAGE.--Water-stage recorder. Altitude of gage is 1,600 ft (488 m), from topographic map.

REMARKS.--Records fair. No regulation. Some diversion for irrigation and Warm Springs water supply.

AVERAGE DISCHARGE.--7 years, 86.1 ft^3/s (2.438 m^3/s), 15.43 in/yr (392 mm/yr), 62,380 acre-ft/yr (76.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,470 ft^3/s (41.6 m^3/s) Dec. 25, 1980, gage height, 6.90 ft (2.103 m); maximum gage height, 7.35 ft (2.240 m) Dec. 13, 1977; minimum daily discharge, 17 ft^3/s (0.48 m^3/s) Oct. 12-15, 17-22, 24-27, Nov. 12, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft^3/s (11.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 3	1200	513	14.5	5.16	1.573	Feb. 18	2330	1,390	39.4	6.77	2.063
Dec. 22	1300	402	11.4	4.89	1.490	June 8	1800	442	12.5	5.67	1.728
Dec. 25	2130	*1,470	41.6	*6.90	2.103						

Minimum, 27 ft^3/s (0.76 m^3/s) Sept. 18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	38	100	149	71	162	88	164	88	73	44	32
2	35	48	208	128	68	152	86	142	88	68	44	34
3	35	51	466	110	66	144	85	117	92	66	44	32
4	35	50	313	98	65	137	81	106	100	65	44	32
5	34	47	222	90	63	128	81	98	114	68	42	32
6	38	50	175	81	62	121	81	92	128	68	41	31
7	34	180	137	96	60	117	79	86	110	66	40	31
8	34	228	112	98	65	112	79	81	320	63	39	30
9	34	162	104	108	63	109	78	78	351	63	39	30
10	34	125	100	110	59	104	76	76	219	60	38	30
11	35	106	90	104	58	102	78	79	169	59	38	30
12	39	92	83	100	62	98	78	78	137	58	38	29
13	39	85	78	96	81	96	74	76	121	56	37	29
14	39	79	74	92	149	94	74	76	110	56	37	29
15	38	78	74	88	154	94	74	81	104	55	37	29
16	37	74	79	85	418	94	76	81	102	54	36	28
17	37	73	85	83	665	90	78	78	106	54	36	28
18	36	71	88	79	795	88	78	86	94	54	35	28
19	36	69	85	78	1040	92	81	96	119	52	35	29
20	36	68	83	78	599	90	85	92	114	52	35	30
21	35	69	110	85	438	90	86	92	98	51	36	31
22	35	213	317	88	327	92	88	90	94	51	35	36
23	35	147	290	94	246	88	108	92	100	50	35	34
24	36	119	320	90	246	86	152	112	86	50	34	32
25	37	104	1040	85	219	90	130	154	83	48	34	32
26	39	96	837	85	202	90	117	137	83	48	34	37
27	39	92	454	88	188	88	106	108	83	47	34	56
28	38	117	313	83	175	86	98	100	74	46	34	62
29	37	119	237	78	---	88	114	100	71	46	34	52
30	37	117	228	74	---	90	139	108	73	46	34	47
31	36	---	185	71	---	90	---	98	---	45	34	---
TOTAL	1124	2967	7087	2872	6704	3202	2728	3054	3631	1738	1157	1022
MEAN	36.3	98.9	229	92.6	239	103	90.9	98.5	121	56.1	37.3	34.1
MAX	39	228	1040	149	1040	162	152	164	351	73	44	62
MIN	34	38	74	71	58	86	74	76	71	45	34	28
CFSM	.48	1.31	3.02	1.22	3.15	1.36	1.20	1.30	1.60	.74	.49	.45
IN.	.55	1.46	3.48	1.41	3.29	1.57	1.34	1.50	1.78	.85	.57	.50
AC-FT	2230	5890	14060	5700	13300	6350	5410	6060	7200	3450	2290	2030

CAL YR 1980	TOTAL 37697	MEAN 103	MAX 1040	MIN 34	CFSM 1.36	IN 18.50	AC-FT 74770			
WTR YR 1981	TOTAL 37286	MEAN 102	MAX 1040	MIN 28	CFSM 1.35	IN 18.30	AC-FT 73960			

14097100 WARM SPRINGS RIVER NEAR KAHNEETA HOT SPRINGS, OR

LOCATION.--Lat 44°51'24", long 121°08'55", in SE¼SW¼ sec.23, T.8 S., R.13 E., Wasco County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on right bank 25 ft (8 m) upstream from bridge, 2.5 mi (4.0 km) east of Kahneeta Hot Springs, and at mile 4.6 (7.4 km).

DRAINAGE AREA.--526 mi² (1,362 km²).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,400 ft (427 m), from topographic map.

REMARKS.--Records good. No regulation. Diversions above station.

AVERAGE DISCHARGE.--9 years, 424 ft³/s (12.01 m³/s), 10.95 in/yr (278 mm/yr), 307,200 acre-ft/yr (379 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,540 ft³/s (185 m³/s) Dec. 15, 1977, gage height, 8.86 ft (2.701 m); minimum daily, 160 ft³/s (4.53 m³/s) Jan. 1, 2, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,700 ft³/s (48.1 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 26	0800	*4,830	137	*7.32	2.231	Feb. 19	0230	3,190	90.3	5.77	1.759

Minimum, 207 ft³/s (5.86 m³/s) Aug. 26, Sept. 10, 16.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	221	235	282	664	308	680	383	342	275	254	228	221
2	221	244	312	604	304	634	374	350	272	254	228	221
3	225	244	876	551	312	604	366	354	268	254	228	221
4	225	238	893	513	304	580	366	346	265	251	228	221
5	225	235	604	481	304	546	358	342	268	254	228	218
6	225	238	490	459	301	513	362	339	268	258	225	218
7	225	289	399	437	289	500	358	331	279	261	225	218
8	221	378	354	424	279	477	354	323	383	261	225	218
9	221	327	323	407	293	459	358	316	614	251	221	214
10	221	279	323	395	297	446	358	308	537	251	221	214
11	225	265	316	383	279	433	354	304	455	251	221	214
12	241	254	301	370	312	424	370	304	407	254	221	214
13	238	248	282	362	468	416	370	301	378	248	221	214
14	235	244	282	354	876	407	358	293	362	248	221	214
15	231	241	275	342	664	403	354	297	342	244	218	214
16	231	241	275	335	870	407	354	304	327	244	218	214
17	228	238	275	331	1320	399	354	297	327	241	218	214
18	228	235	272	327	1710	387	354	327	316	241	218	214
19	228	235	272	323	2840	391	354	354	308	238	218	218
20	228	235	272	323	2090	407	358	319	301	238	218	218
21	228	238	286	335	1510	399	358	304	293	235	218	225
22	228	308	532	350	1230	399	358	301	286	235	218	231
23	225	297	711	350	1070	391	362	293	286	235	218	228
24	228	272	716	342	1230	378	366	312	282	235	218	225
25	231	258	2280	327	1040	387	378	335	272	235	218	225
26	235	254	3190	327	876	399	383	319	268	235	218	235
27	244	248	1890	366	797	383	374	304	265	231	218	286
28	238	254	1330	354	732	370	362	297	265	231	218	265
29	231	268	1000	335	---	366	358	289	261	228	218	244
30	231	308	842	335	---	383	339	286	258	231	221	235
31	231	---	748	323	---	383	---	279	---	231	221	---
TOTAL	7093	7848	21203	12129	22905	13751	10855	9770	9688	7558	6853	6731
MEAN	229	262	684	391	818	444	362	315	323	244	221	224
MAX	244	378	3190	664	2840	680	383	354	614	261	228	286
MIN	221	235	272	323	279	366	339	279	258	228	218	214
CFSM	.44	.50	1.30	.74	1.56	.84	.69	.60	.61	.46	.42	.43
IN.	.50	.56	1.50	.86	1.62	.97	.77	.69	.69	.53	.48	.48
AC-FT	14070	15570	42060	24060	45430	27280	21530	19380	19220	14990	13590	13350

CAL YR 1980 TOTAL 157116 MEAN 429 MAX 3430 MIN 218 CFSM .82 IN 11.11 AC-FT 311600
WTR YR 1981 TOTAL 136384 MEAN 374 MAX 3190 MIN 214 CFSM .71 IN 9.65 AC-FT 270500

14097200 WHITE RIVER NEAR GOVERNMENT CAMP, OR

LOCATION.--Lat 45°10'40", long 121°34'30", in NE¼SW¼ sec.32, T.4 S., R.10 E., Wasco County, Hydrologic Unit 17070306, in Mount Hood National Forest, on left bank at Faith Spring, 1.4 mi (2.3 km) above Klip Creek, and at mile 33.3 (53.6 km).

DRAINAGE AREA.--40.7 mi^2 (105.4 km^2).

PERIOD OF RECORD.--July 1969 to October 1979, July 1980 to September 1981 (discontinued).

REVISED RECORDS.--WDR OR-72-1: 1970. WDR OR-79-1: 1978.

GAGE.--Water-stage recorder. Altitude of gage is 2,740 ft (835 m) from topographic map.

REMARKS.--Records good except those for periods of unstable stage-discharge relation Oct. 1 to Dec. 21 and Sept. 11-30, which are poor. No regulation or diversion above station.

AVERAGE DISCHARGE.--11 years, 165 ft^3/s (4.673 m^3/s), 55.05 in/yr (1,398 mm/yr), 119,500 acre-ft/yr (147 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,650 ft^3/s (103 m^3/s) Dec. 13, 1977, gage height, 6.63 ft (2.021 m); minimum, 20 ft^3/s (0.57 m^3/s) Jan. 6, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft^3/s (17.0 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 25	2100	*2,960	83.8	*6.32	1.926	Feb. 18	1900	1,500	42.5	5.10	1.554
Feb. 16	1000	1,150	32.6	4.71	1.436						

Minimum, 34 ft^3/s (0.96 m^3/s) Aug. 28.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	48	65	224	78	192	105	213	87	102	63	40
2	47	49	120	203	78	179	100	196	87	94	63	40
3	47	50	240	182	76	169	102	179	85	92	63	40
4	46	52	170	166	74	160	100	169	95	90	63	42
5	45	54	115	154	74	147	110	157	92	95	63	42
6	44	56	105	144	72	138	105	144	92	92	63	40
7	43	90	100	135	69	132	100	141	121	113	61	39
8	42	130	95	132	69	124	107	129	286	95	61	39
9	42	90	95	132	69	124	113	127	277	87	61	39
10	42	70	105	129	65	121	105	118	227	83	60	39
11	44	65	95	129	76	118	110	118	199	83	58	38
12	48	60	90	129	100	115	105	110	192	80	58	36
13	46	55	90	128	110	113	100	110	196	80	58	36
14	45	52	90	127	160	110	102	110	173	78	56	36
15	45	50	90	124	182	110	107	115	157	78	50	36
16	45	50	95	121	771	113	115	107	173	78	47	36
17	45	50	105	118	540	105	127	105	166	78	45	38
18	45	50	100	118	1080	102	147	124	160	76	44	38
19	45	50	95	118	1090	100	169	130	189	74	47	40
20	45	60	110	124	625	97	182	120	166	76	47	42
21	45	90	180	132	440	97	189	110	154	74	44	44
22	44	75	456	138	369	100	286	110	157	74	40	44
23	44	65	359	144	323	92	350	115	147	69	40	42
24	44	60	523	144	328	92	355	130	135	69	40	40
25	47	55	2020	132	277	107	282	130	129	67	39	44
26	52	55	1260	110	250	100	235	115	124	67	37	60
27	50	55	644	100	224	95	210	110	115	67	37	80
28	48	65	424	95	206	92	217	97	113	65	36	70
29	46	75	346	87	---	105	213	95	107	65	36	65
30	46	70	311	85	---	102	217	95	105	63	37	60
31	47	---	258	83	---	113	---	90	---	63	39	---
TOTAL	1412	1896	8951	4087	7875	3664	4865	3919	4506	2467	1556	1325
MEAN	45.5	63.2	289	132	281	118	162	126	150	79.6	50.2	44.2
MAX	52	130	2020	224	1090	192	355	213	286	113	63	80
MIN	42	48	65	83	65	92	100	90	85	63	36	36
CFSM	1.12	1.55	7.10	3.24	6.90	2.90	3.98	3.10	3.69	1.96	1.23	1.09
IN.	1.29	1.73	8.18	3.74	7.20	3.35	4.45	3.58	4.12	2.25	1.42	1.21
AC-FT	2800	3760	17750	8110	15620	7270	9650	7770	8940	4890	3090	2630

WTR YR 1981 TOTAL 46523 MEAN 127 MAX 2020 MIN 36 CFSM 3.12 IN 42.52 AC-FT 92280

14097200 WHITE RIVER NEAR GOVERNMENT CAMP, OR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
MAY										
29...	1130	76	70	7.4	11.0	10.1	K1	19	5.1	1.5

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)
MAY									
29...	4.7	.9	17	.8	2.1	.1	1.1	.050	.66

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAY									
29...	.040	.71	.030	3.3	22	57	52	3	37

14101500 WHITE RIVER BELOW TYGH VALLEY, OR

LOCATION.--Lat 45°14'30", long 121°05'38", in NE¼NE¼ sec.7, T.4 S., R.14 E., Wasco County, Hydrologic Unit 17070306, on left bank 200 ft (61 m) downstream from former Pacific Power & Light Co. powerplant at White River Falls, 3.9 mi (6.3 km) east of town of Tygh Valley, and at mile 2.0 (3.2 km).

DRAINAGE AREA.--417 mi² (1,080 km²).

PERIOD OF RECORD.--October 1917 to current year.

REVISED RECORDS.--WSP 1448: 1920, 1923, 1927-28, drainage area. WSP 1935: 1956.

GAGE.--Water-stage recorder. Datum of gage is 870.15 ft (265.222 m) National Geodetic Vertical Datum of 1929 (levels by Pacific Power & Light Co.). Prior to July 28, 1931, at site 750 ft (229 m) downstream at different datum. July 28, 1931, to Sept. 30, 1954, at site 700 ft (213 m) downstream at different datums.

REMARKS.--Records fair except those for December and January, which are poor. No regulation. Diversions above station for irrigation.

AVERAGE DISCHARGE.--64 years, 425 ft³/s (12.04 m³/s), 307,900 acre-ft/yr (380 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft³/s (377 m³/s) Jan. 6, 1923, gage height, about 13.3 ft (4.05 m), site and datum then in use, from rating curve extended above 5,000 ft³/s (142 m³/s); minimum, 7.5 ft³/s (0.21 m³/s) Aug. 31, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,600 ft³/s (45.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 26	-	*6,070	172	a*8.58	2.615	Feb. 19	0330	3,310	93.7	6.29	1.917

Minimum, 86 ft³/s (2.44 m³/s) Sept. 12-14.

a From floodmark.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	111	160	600	311	770	307	409	190	168	118	105
2	103	117	170	560	296	718	323	383	182	160	118	105
3	103	115	350	520	296	673	319	362	182	155	116	103
4	105	124	700	480	282	646	311	338	179	160	116	103
5	105	119	550	450	282	604	319	323	187	163	116	105
6	103	124	450	440	272	574	307	307	182	168	116	103
7	101	196	400	420	262	540	300	293	179	171	115	99
8	103	293	340	400	258	500	307	279	383	173	113	101
9	101	187	310	380	262	470	311	258	554	155	113	99
10	97	157	290	370	245	436	319	248	441	147	107	99
11	95	140	280	360	238	414	330	241	387	150	101	97
12	105	131	270	350	338	414	354	224	323	145	101	92
13	115	124	260	340	446	400	370	221	323	145	101	90
14	109	124	260	330	684	387	390	224	307	142	101	90
15	105	122	250	330	695	375	400	228	286	135	99	92
16	105	122	250	320	1470	370	400	228	279	131	99	97
17	109	119	250	310	1910	362	400	215	296	131	99	99
18	109	122	250	300	2190	354	400	234	265	131	101	97
19	107	124	250	300	3150	350	390	272	286	128	99	101
20	107	122	250	296	2380	346	379	241	286	126	101	103
21	107	124	260	323	1810	330	375	224	262	126	103	105
22	105	221	400	330	1480	330	409	218	245	128	103	109
23	103	165	500	319	1290	346	514	215	248	124	105	111
24	105	147	700	315	1340	350	554	231	224	124	107	107
25	107	138	3000	300	1150	354	479	262	208	124	101	109
26	109	138	3800	307	1020	338	441	251	196	122	94	117
27	115	133	1800	342	927	326	400	231	190	122	92	187
28	113	152	1300	334	837	326	392	218	185	122	94	171
29	111	168	1000	330	---	315	396	208	176	120	95	147
30	109	185	800	330	---	326	400	205	171	120	101	135
31	111	---	700	330	---	319	---	199	---	118	103	---
TOTAL	3289	4364	20550	11416	26121	13363	11296	7990	7802	4334	3248	3278
MEAN	106	145	663	368	933	431	377	258	260	140	105	109
MAX	115	293	3800	600	3150	770	554	409	554	173	118	187
MIN	95	111	160	296	238	315	300	199	171	118	92	90
AC-FT	6520	8660	40760	22640	51810	26510	22410	15850	15480	8600	6440	6500

CAL YR 1980 TOTAL 154328 MEAN 422 MAX 3800 MIN 95 AC-FT 306100
WTR YR 1981 TOTAL 117051 MEAN 321 MAX 3800 MIN 90 AC-FT 232200

NOTE.--No gage-height record Dec. 2 to Jan. 18.

14103000 DESCHUTES RIVER AT MOODY, NEAR BIGGS, OR
(National stream-quality accounting network station)

LOCATION.--Lat 45°37'20", long 120°54'05", in SW¼SE¼ sec.26, T.2 N., R.15 E., Sherman County, Hydrologic Unit 17070306, on right bank at Moody, 4.0 mi (6.4 km) southwest of Biggs, and at mile 1.4 (2.3 km).

DRAINAGE AREA.--10,500 mi² (27,200 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1897 to December 1899 (published as "near Moro"), July 1906 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 754: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 167.54 ft (51.066 m) National Geodetic Vertical Datum of 1929. Oct. 19, 1897, to Dec. 31, 1899, nonrecording gage at site 10 mi (16 km) upstream at different datum. July 22, 1906, to July 18, 1930, nonrecording gage at site 300 ft (91 m) downstream at datum 0.50 ft (0.152 m) lower.

REMARKS.--Water-discharge records good. Some fluctuation caused by regulation at Lake Simtustus since 1957. Some winter and spring runoff stored in Ochoco Reservoir, capacity, 46,420 acre-ft (57.2 hm³), in Crescent Lake, Crane Prairie and Wickiup Reservoirs, combined capacity, 323,390 acre-ft (399 hm³), and since 1960, in Prineville Reservoir (see station 14080400), and since 1964 in Lake Billy Chinook (see station 14092100). Large diversions in upper river basin for irrigation.

AVERAGE DISCHARGE.--77 years, 5,813 ft³/s (164.6 m³/s), 4,212,000 acre-ft/yr (5.19 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,500 ft³/s (2,140 m³/s) Dec. 22, 1964, gage height, 11.80 ft (3.597 m), from rating curve extended above 47,000 ft³/s (1,330 m³/s); minimum, 2,400 ft³/s (68.0 m³/s) Dec. 5, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,700 ft³/s (416 m³/s) Dec. 26, gage height, 5.24 ft (1.597 m); minimum recorded, 3,760 ft³/s (106 m³/s) July 24, but may have been less during period July 28 to Sept. 15.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4450	4970	5130	7380	7000	8300	7060	5610	4780	4270	4210	3850
2	4450	5000	5000	7240	6900	7590	7270	5640	4720	4300	4120	3880
3	4450	5000	5350	7800	6830	7200	7310	5570	4480	4090	4120	3880
4	4450	5060	7130	7760	6930	7000	7000	5570	4390	4090	3820	3880
5	4480	5160	7450	6900	6960	6690	6960	5540	4420	4120	3820	3880
6	4480	5190	6960	6690	6900	6660	7000	5510	4660	4120	3820	3880
7	4480	5220	6630	6690	6860	6390	6290	5250	4850	4120	3820	3880
8	4480	5380	6390	6690	6830	6290	6010	4970	5090	4120	3820	3880
9	4390	5440	6150	5880	6800	6220	5840	4630	6590	4060	4000	3880
10	4270	5380	6050	5710	7060	6150	5570	4570	7380	4030	4150	3970
11	4330	5570	5470	5610	6730	6150	5540	4540	6830	4210	4150	3970
12	4360	5910	5740	5610	6930	6120	5570	4540	6050	4390	4150	3880
13	4330	5880	5950	6050	7170	6050	5540	4540	5000	4360	4150	3880
14	4300	5570	5950	6590	8260	5980	5440	4240	4750	4360	4150	3880
15	4270	5220	5950	6220	7910	5980	5000	4210	4720	4030	4150	3880
16	4360	5130	5980	6080	7830	6050	4940	4540	4850	3940	4150	3820
17	4360	5090	6050	6530	9730	5640	4690	4600	5250	3910	4150	3850
18	4330	5060	6050	6390	9580	5470	4660	4660	5310	3940	4150	3880
19	4330	5060	6010	5540	12900	5510	4690	4820	4910	3940	4150	3850
20	4330	5060	6010	5440	11200	5190	4720	4940	4690	3940	4150	3880
21	4330	5030	6050	5810	9140	4910	4750	4910	4600	3880	4150	3880
22	4330	4780	6420	5950	8160	4880	4780	4910	4540	3880	4150	3910
23	4330	4600	6860	5130	7550	4880	4910	4540	4660	3850	4150	3940
24	4360	4480	6830	4450	7480	5440	5000	4270	4720	3790	4150	3910
25	4420	4970	8520	4000	8160	5680	5610	4420	4660	3850	3940	3910
26	4510	5060	13500	4120	8370	6120	5740	4540	4630	3850	3850	4150
27	4630	5060	11400	4720	8950	6250	5710	4850	4600	3850	3850	4480
28	4780	5090	9690	5220	8810	6250	5640	4970	4600	4060	3850	4880
29	4850	5090	8590	5410	---	6220	5640	4940	4570	4360	3850	4910
30	4910	5130	8010	6050	---	6250	5610	4850	4300	4420	3850	4540
31	4970	---	7760	6420	---	6760	---	4850	---	4420	3850	---
TOTAL	138100	154640	215030	186080	223930	190270	170490	150540	149600	126550	124840	120140
MEAN	4455	5155	6936	6003	7998	6138	5683	4856	4987	4082	4027	4005
MAX	4970	5910	13500	7800	12900	8300	7310	5640	7380	4420	4210	4910
MIN	4270	4480	5000	4000	6730	4880	4660	4210	4300	3790	3820	3820
AC-FT	273900	306700	426500	369100	444200	377400	338200	298600	296700	251000	247600	238300

CAL YR 1980 TOTAL 2094090 MEAN 5722 MAX 17200 MIN 3870 AC-FT 4154000
WTR YR 1981 TOTAL 1950210 MEAN 5343 MAX 13500 MIN 3790 AC-FT 3868000

14103000 DESCHUTES RIVER AT MOODY, NEAR BIGGS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1911-12, 1953-58, 1962 to September 1981 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to September 1981 (discontinued).
WATER TEMPERATURES: December 1952 to February 1954, November 1954 to September 1958, June 1962 to September 1981 (discontinued).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 241 micromhos July 15, 1978; minimum, 63 micromhos Dec. 5, 1975.
WATER TEMPERATURES: Maximum, 23.0°C July 21, 22, 1980; minimum, 0.5°C Dec. 30, 1955.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 897 micromhos July 31, Aug. 1; minimum, 90 micromhos Feb. 20.
WATER TEMPERATURES: Maximum, 21.5°C July 26, 27, Aug. 8, 12-14; minimum, 4.5°C Feb. 10, 11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT												
14...	1620	4040	142	8.4	13.5	13.4	K4	K7	45	.00	9.0	5.5
NOV												
18...	1340	5060	122	8.1	9.0	12.4	K9	K8	39	.00	7.2	5.1
DEC												
15...	1520	5970	134	--	8.0	12.0	K5	K8	41	.00	7.7	5.4
JAN												
12...	1430	5360	--	7.7	7.0	12.2	--	K8	37	--	7.1	4.7
FEB												
09...	1445	6520	141	7.7	6.0	12.5	25	K3	45	.00	8.6	5.6
MAR												
10...	1415	6110	124	8.0	9.5	12.6	< 1	< 1	41	--	8.1	5.0
APR												
22...	1345	4650	114	7.9	14.0	11.2	K2	K2	38	.00	7.6	4.6
MAY												
14...	1345	4180	131	7.9	14.0	10.7	K6	K9	45	.00	8.1	6.0
JUN												
02...	1325	4600	133	8.3	16.0	11.6	K8	K9	44	.00	9.0	5.3
30...	1320	4500	125	8.1	19.0	10.4	K13	K23	42	.00	8.4	5.2
JUL												
28...	1330	4020	140	7.2	21.0	10.4	51	52	41	.00	8.1	5.0
SEP												
15...	1530	3870	121	8.1	17.0	11.4	K13	24	42	.00	8.6	5.0

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT												
14...	12	2.2	72	4.8	1.6	.1	< .10	< .010	.25	< .010	.34	.43
NOV												
18...	10	2.1	62	2.0	2.2	.1	.18	.020	.31	.040	.41	.59
DEC												
15...	11	2.0	59	5.3	2.4	.2	.19	.050	.48	--	.58	.77
JAN												
12...	10	1.8	61	2.2	1.9	.2	.13	.040	.39	.090	.53	.64
FEB												
09...	11	1.9	60	2.1	2.4	.2	.21	.020	1.4	--	.40	.60
MAR												
10...	11	1.8	59	3.0	2.6	.2	.24	.040	.27	.050	.41	--
APR												
22...	9.6	1.9	56	< 1.0	1.7	.1	< .10	.090	.31	.110	.80	.84
MAY												
14...	11	1.9	71	< 1.0	2.2	.1	< .10	.050	.26	.090	.66	.68
JUN												
02...	11	1.9	57	< 1.0	2.4	.1	< .10	< .010	.17	.080	.47	.47
30...	10	1.9	65	1.0	2.2	.1	< .10	.060	.41	.060	.66	.67
JUL												
28...	11	1.9	54	< 1.0	2.2	.1	.11	.160	.40	.200	.48	.59
SEP												
15...	10	1.9	58	< 5.0	2.0	.1	< .10	< .070	.54	.020	.79	.80

14103000 DESCHUTES RIVER AT MOODY, NEAR BIGGS, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	CARBON, ORGANIC TOTAL (MG/L AS C)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	TUR-BID-ITY (NTU)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT												
14...	.140	.120	3.2	.6	--	32	--	111	.75	9	98	50
NOV												
18...	.070	.080	--	--	--	31	96	98	2.1	12	164	62
DEC												
15...	.050	.030	--	--	4.1	29	94	99	1.9	15	242	48
JAN												
12...	.030	.090	5.4	.1	--	27	82	92	3.9	20	289	47
FEB												
09...	.080	.090	--	--	2.9	31	99	100	1.6	--	--	--
MAR												
10...	.070	.070	--	--	1.9	31	81	99	2.5	18	297	36
APR												
22...	.080	.080	2.1	.2	--	29	--	89	1.7	11	138	57
MAY												
14...	.170	.230	--	--	2.2	28	95	100	2.0	14	158	50
JUN												
02...	.050	.090	--	--	1.8	30	96	95	3.1	15	186	56
30...	.060	.080	1.6	.5	--	29	88	103	2.6	10	121	56
JUL												
28...	.070	.090	--	--	1.5	28	94	--	2.3	12	130	52
SEP												
15...	.050	.080	--	--	2.2	30	91	--	9.3	14	146	67

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)
OCT										
14...	5	5	9	100	2	< 1	< 10	< 10	< 3	1
JAN										
12...	1	1	10	100	2	< 1	< 10	20	< 3	< 1
APR										
22...	2	2	10	< 100	< 1	< 1	10	20	< 3	2
JUN										
30...	2	3	70	< 100	< 1	< 1	< 10	< 10	< 3	< 1

DATE	COPPER, DIS-SOLVED (UG/L AS CU)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)
OCT									
14...	1	5	10	170	2	4	3	10	< .1
JAN									
12...	2	4	60	330	< 1	1	2	20	< .1
APR									
22...	3	4	110	100	2	13	10	10	< .1
JUN									
30...	2	4	100	170	2	3	9	10	< .1

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, DIS-SOLVED (UG/L AS NI)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
OCT									
14...	--	< 0	2	< 1	--	< 1	1	20	20
JAN									
12...	--	2	1	< 1	< 1	< 1	< 1	5	20
APR									
22...	.2	3	4	< 1	< 1	< 1	< 1	10	40
JUN									
30...	.1	1	1	< 1	< 1	< 1	< 1	10	10

14103000 DESCHUTES RIVER AT MOODY, NEAR BIGGS, OR--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981

DATE	NOV 18,80	MAR 10,81	MAY 14,81	JUN 2,81	JUN 30,81	SEP 15,81
TIME	1340	1415	1345	1325	1320	0000
TOTAL CELLS/ML	170	90	15000	3200	1900	10000
DIVERSITY: DIVISION	0.0	0.0	1.0	0.8	0.6	0.0
.CLASS	0.0	0.0	1.0	0.8	0.6	0.0
..ORDER	1.0	2.2	1.2	1.9	1.5	2.2
...FAMILY	1.0	2.2	1.2	2.0	1.6	2.5
....GENUS	1.0	2.2	1.2	2.5	1.6	2.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)												
.BACILLARIOPHYCEAE												
..ACHNANTHALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	13	14	--	-	47	1	--	-	--	-
....RHOICOSPHENIA	--	-	--	-	--	-	--	-	--	-	680	7
..BACILLARIALES												
...NITZSCHIACEAE												
....NITZSCHIA	13	8	13	14	*	0	750#	24	350#	18	2100#	21
..EUPODISCALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	13	14	--	-	960#	30	1200#	62	2100#	21
....STEPHANODISCUS	130#	77	--	-	7000#	47	590#	19	--	-	--	-
..FRAGILARIALES												
...FRAGILARIACEAE												
....DIATOMA	--	-	26#	29	--	-	70	2	--	-	1600#	16
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	850	8
..NAVICULALES												
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	23	1	--	-	1300	13
...GOMPHONEMACEAE												
....GOMPHONEMA	--	-	--	-	--	-	47	1	17	1	--	-
...NAVICULACEAE												
....NAVICULA	26#	15	26#	29	*	0	70	2	100	5	1500	15
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	--	-	270	14	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	--	-	--	-	47	1	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	280	2	--	-	--	-	--	-
..OSCILLATORIALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	7600#	50	560#	18	--	-	--	-

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

14103000 DESCHUTES RIVER AT MOODY, NEAR BIGGS, OR--Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	146	143	125	145	115	115	132	135	129	187	152
2	131	149	143	126	143	116	109	121	134	133	174	152
3	129	151	143	124	144	116	107	118	137	135	164	146
4	126	145	135	124	147	117	106	119	146	140	161	138
5	128	141	138	122	148	119	106	118	153	141	159	147
6	130	141	144	120	148	119	105	119	160	136	151	149
7	130	139	144	118	145	120	103	117	163	134	151	129
8	130	141	141	117	143	121	106	118	158	132	149	126
9	132	141	141	116	140	122	109	117	151	131	152	127
10	131	139	139	116	126	123	113	120	146	132	157	127
11	132	131	142	119	121	116	116	119	146	134	158	130
12	134	128	144	120	116	116	117	120	142	133	161	126
13	135	130	142	120	112	118	121	129	139	137	162	124
14	132	129	137	118	110	117	121	130	138	140	162	124
15	133	129	135	116	108	114	123	134	141	137	163	123
16	133	129	137	118	110	112	123	145	140	136	171	124
17	134	127	140	121	101	114	120	---	133	140	176	129
18	137	126	141	129	97	118	120	---	130	139	176	132
19	142	126	142	135	95	118	119	170	129	138	174	132
20	145	124	144	140	90	119	116	165	128	139	176	131
21	146	126	143	145	93	122	113	155	124	136	174	130
22	147	126	140	147	97	127	115	149	120	135	166	125
23	149	124	134	145	100	132	120	155	119	138	165	121
24	152	124	130	145	101	133	128	164	119	140	163	117
25	153	130	125	150	102	131	135	162	118	142	157	115
26	154	135	118	153	104	132	145	155	116	141	157	115
27	150	135	121	154	109	129	144	153	117	143	153	110
28	152	133	126	154	112	128	133	152	115	143	152	112
29	151	136	126	151	---	125	131	152	120	146	154	110
30	148	141	126	148	---	123	131	146	126	161	152	110
31	146	---	125	147	---	120	---	138	---	180	152	---
MEAN	139	134	136	132	118	121	119	138	135	139	162	128

14103000 DESCHUTES RIVER AT MOODY, NEAR BIGGS, OR--Continued

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

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.0	14.5	11.5	11.0	8.0	7.5	8.5	8.0	6.5	5.5	8.5	7.0
2	15.5	13.5	12.0	11.0	8.0	7.5	8.5	8.0	6.5	5.5	9.0	7.0
3	15.5	13.5	12.5	12.0	9.0	8.0	8.5	8.0	6.5	6.0	8.5	7.5
4	16.0	14.0	12.5	12.0	8.5	7.5	8.0	7.5	6.5	6.0	8.5	7.5
5	16.0	14.0	12.0	12.0	8.0	7.5	8.0	7.5	6.5	6.0	8.5	7.0
6	16.0	14.5	12.0	12.0	7.5	7.0	8.0	7.5	7.0	6.0	8.0	6.5
7	16.5	14.5	12.5	12.0	7.0	6.5	7.5	7.0	6.5	6.0	7.5	6.5
8	16.0	14.5	12.0	11.5	6.5	6.0	7.0	7.0	6.0	5.5	8.5	6.5
9	15.0	13.5	11.5	10.5	6.5	6.0	7.0	6.5	6.0	5.5	9.5	7.5
10	13.5	12.5	10.5	10.0	7.0	6.0	7.0	7.0	5.5	4.5	9.5	7.5
11	13.5	12.5	10.0	9.5	7.5	6.5	7.0	7.0	6.0	4.5	10.0	8.0
12	14.0	13.0	10.0	9.0	8.0	7.0	7.0	6.5	7.0	5.5	10.0	8.0
13	14.5	13.0	9.5	8.5	7.0	6.5	6.5	6.5	7.5	6.5	10.5	8.5
14	14.0	12.5	9.0	8.5	7.5	6.5	6.5	6.0	8.0	6.5	10.5	8.5
15	13.0	12.0	9.0	8.5	8.0	7.0	6.0	5.5	8.0	7.5	9.5	8.5
16	13.5	12.0	8.5	8.5	7.5	7.0	5.5	5.5	8.5	7.5	9.5	8.0
17	13.0	12.0	8.5	8.0	7.5	7.5	6.0	5.5	8.0	7.0	9.5	8.0
18	13.5	11.5	9.5	8.5	7.5	7.0	6.5	6.0	8.0	7.0	9.0	7.5
19	13.5	12.0	10.0	9.0	7.0	7.0	6.5	6.0	8.5	7.5	8.5	8.0
20	13.5	12.5	9.5	9.0	7.5	7.0	6.5	6.5	7.5	6.5	8.5	8.0
21	13.0	12.0	10.0	9.5	7.5	7.0	7.0	6.5	7.0	6.0	9.5	7.5
22	12.0	11.0	9.5	9.0	8.5	7.5	7.5	7.0	7.5	6.5	10.5	8.0
23	11.5	10.5	9.0	8.0	8.0	7.5	8.0	7.5	8.0	7.0	10.0	8.5
24	11.0	10.5	8.0	7.5	7.5	7.5	7.5	7.0	8.0	7.5	10.0	8.5
25	12.0	11.0	9.0	8.0	8.5	7.5	7.5	6.5	7.5	6.5	10.5	9.0
26	11.5	11.0	8.5	8.5	8.5	8.5	7.0	6.5	7.5	6.5	10.5	9.0
27	11.5	10.5	9.0	8.5	8.5	8.5	6.5	6.0	8.0	7.0	10.5	8.5
28	11.5	11.0	9.0	8.5	8.5	7.5	6.5	6.0	8.5	7.0	11.5	9.0
29	11.0	10.5	9.0	8.5	7.5	7.0	7.0	6.0	---	---	11.0	9.5
30	11.0	10.5	8.5	8.0	8.0	7.5	7.5	6.5	---	---	10.0	9.0
31	11.5	10.5	---	---	8.5	8.0	7.0	6.0	---	---	9.5	8.5
MONTH	16.5	10.5	12.5	7.5	9.0	6.0	8.5	5.5	8.5	4.5	11.5	6.5

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

14105700 COLUMBIA RIVER AT THE DALLES, OR

LOCATION.--Lat 45°36'27", long 121°10'20", in SW¼SW¼ sec.34, T.2 N., R.13 E., Wasco County, Hydrologic Unit 17070105, Corps of Engineers land, on left bank 0.3 mi (0.5 km) downstream from Mill Creek, 2.6 mi (4.2 km) downstream from The Dalles Dam, and at mile 188.9 (303.9 km).

DRAINAGE AREA.--237,000 mi² (614,000 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1857 to September 1877 (annual maximum only, at Lower Cascades Landing, published in WSP 1318), June 1878 to current year. Published as "near The Dalles" 1936-56.

REVISED RECORDS.--WSP 534: 1920(m). WSP 1094: 1894. WSP 1248: 1866, 1888, 1899, 1909. WSP 1518: 1876(M).

GAGE.--Acoustic velocity meter (AVM) with water-stage and velocity-index recorder. Datum of gage is National Geodetic Vertical Datum of 1929. See WSP 1738 for history of changes prior to Mar. 16, 1957. Mar. 16, 1957, to Sept 30, 1968, water-stage recorder at site 0.4 mi (0.6 km) upstream at same datum.

REMARKS.--Water-discharge records excellent. Considerable regulation by many large reservoirs. Diurnal fluctuations caused by powerplant and gates at The Dalles Dam. Many diversions for irrigation above station.

AVERAGE DISCHARGE.--103 years, 193,100 ft³/s (5,469 m³/s), 139,900,000 acre-ft/yr (172 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (1858-1981), 1,240,000 ft³/s (35,100 m³/s) June 6, 1894, gage height, 106.5 ft (32.46 m); minimum (1878-1981), 12,100 ft³/s (343 m³/s) Apr. 16, 1968 (due to closure of John Day dam, recorded by AVM).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 449,000 ft³/s (12,700 m³/s) June 10; maximum gage height, 84.00 ft (25.603 m) June 5; minimum daily discharge, 61,700 ft³/s (1,750 m³/s) Oct. 12.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102000	111000	130000	259000	174000	144000	180000	206000	402000	228000	182000	128000
2	117000	97100	130000	271000	185000	164000	176000	208000	394000	223000	165000	133000
3	135000	124000	159000	267000	212000	186000	183000	238000	375000	247000	177000	129000
4	86600	115000	175000	235000	232000	184000	160000	264000	384000	223000	190000	128000
5	68100	118000	180000	209000	238000	170000	121000	270000	386000	228000	194000	126000
6	93900	111000	161000	230000	213000	183000	170000	260000	408000	255000	195000	95400
7	90400	115000	137000	218000	178000	145000	170000	262000	389000	280000	243000	85800
8	88500	108000	178000	222000	149000	132000	164000	218000	388000	311000	195000	129000
9	99900	94300	180000	218000	191000	165000	173000	194000	418000	299000	136000	136000
10	96200	138000	163000	218000	218000	152000	159000	177000	449000	302000	168000	117000
11	96700	120000	178000	191000	215000	166000	137000	201000	434000	236000	151000	108000
12	61700	150000	168000	201000	196000	162000	120000	231000	417000	194000	187000	94800
13	82800	173000	163000	222000	193000	163000	177000	207000	412000	226000	162000	80400
14	117000	160000	131000	207000	138000	142000	153000	215000	413000	233000	158000	128000
15	127000	113000	156000	219000	150000	120000	151000	216000	381000	252000	204000	107000
16	118000	111000	157000	238000	175000	145000	156000	220000	353000	266000	184000	123000
17	127000	126000	163000	187000	211000	169000	141000	168000	339000	249000	161000	132000
18	118000	116000	173000	152000	221000	169000	106000	217000	333000	175000	158000	146000
19	90300	137000	167000	201000	245000	177000	133000	223000	343000	155000	162000	107000
20	128000	134000	144000	175000	245000	162000	142000	180000	362000	243000	133000	85300
21	110000	149000	123000	196000	231000	135000	125000	213000	366000	228000	134000	120000
22	105000	157000	140000	203000	200000	141000	164000	215000	365000	193000	139000	120000
23	115000	125000	155000	203000	219000	156000	148000	209000	365000	216000	126000	130000
24	115000	147000	186000	185000	200000	164000	156000	247000	346000	222000	151000	117000
25	104000	146000	141000	163000	208000	153000	176000	208000	335000	200000	145000	131000
26	75000	153000	189000	210000	211000	159000	145000	246000	328000	170000	150000	92200
27	131000	126000	242000	201000	206000	180000	172000	297000	299000	201000	148000	71300
28	125000	149000	271000	203000	169000	147000	212000	313000	275000	231000	142000	119000
29	120000	126000	250000	194000	---	155000	212000	338000	279000	209000	136000	103000
30	113000	110000	258000	199000	---	165000	214000	379000	254000	223000	107000	116000
31	125000	---	258000	199000	---	182000	---	366000	---	223000	149000	---
TOTAL	3280100	3859400	5406000	6496000	5623000	4937000	4796000	7406000	10990000	7141000	5052000	3438700
MEAN	105800	128600	174400	209500	200800	159300	159900	238900	366300	230400	162300	114600
MAX	135000	173000	271000	271000	245000	186000	214000	379000	449000	311000	243000	146000
MIN	61700	94300	123000	152000	138000	120000	106000	168000	254000	155000	107000	71800
AC-FT	6506000	7655000	10720000	12880000	11150000	9793000	9513000	14690000	21800000	14160000	9981000	6821000

CAL YR 1980 TOTAL 59106500 MEAN 161500 MAX 345000 MIN 61700 AC-FT 117200000
WTR YR 1981 TOTAL 68405200 MEAN 187400 MAX 449000 MIN 61700 AC-FT 135700000

14105700 COLUMBIA RIVER AT THE DALLES, OR--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected at The Dalles Dam, 3.2 mi (5.1 km) upstream from discharge station.

PERIOD OF RECORD.--Water years 1951 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1950 to current year.
WATER TEMPERATURES: December 1950 to September 1969, October 1973 to September 1976.

REMARKS.--No appreciable inflow between sampling point and gaging station except during periods of heavy local runoff.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 324 micromhos Dec. 7, 1955; minimum daily, 95 micromhos June 8, 1972.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily recorded, 211 micromhos Dec. 11; minimum daily recorded, 129 micromhos June 6, 20-21, July 8-11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	168	169	192	196	169		---	181	151	133	135	138
2	170	168	195	192	170		---	185	145	134	---	137
3	169	167	198	194	172		---	194	---	---	137	139
4	169	170	203	197	172		---	192	134	132	---	139
5	168	172	200	194	172		---	191	131	---	137	141
6	167	175	199	192	174		---	187	129	132	---	140
7	168	177	200	185	177		---	175	130	---	138	---
8	171	178	200	186	178		---	167	133	129	138	---
9	173	179	202	186	178		---	---	134	129	140	---
10	176	179	207	188	178		---	159	136	129	139	---
11	175	179	211	191	177		---	158	135	129	136	---
12	177	182	207	192	173		---	---	134	131	---	---
13	176	180	200	193	179		---	158	133	131	136	---
14	175	182	196	192	179		---	156	136	131	138	---
15	176	184	193	188	176		---	155	140	---	136	142
16	178	186	191	180	175		---	154	139	132	136	143
17	179	186	189	160	175		---	153	137	135	136	143
18	180	190	190	160	168		---	153	135	132	137	146
19	179	196	193	160	172		---	153	133	131	136	149
20	178	196	194	159	170		---	150	129	133	137	157
21	176	193	194	155	171		---	150	129	---	138	151
22	176	198	194	156	170		---	149	131	132	137	154
23	176	203	196	157	---		---	152	132	133	136	155
24	173	201	195	159	---		---	153	133	134	136	---
25	169	199	194	160	---		---	156	134	---	136	158
26	168	199	192	161	---		---	156	132	134	136	---
27	168	201	187	161	---		---	156	133	134	138	158
28	168	198	194	162	---		---	155	135	135	138	---
29	169	195	194	164	---		181	157	136	135	138	153
30	168	192	194	164	---		181	154	134	135	138	155
31	---	---	198	166	---		---	155	---	134	139	---
MEAN	173	186	197	176	174		181	163	135	132	137	147

14113200 MOSIER CREEK NEAR MOSIER, OR

LOCATION.--Lat 45°38'55", long 121°22'35", in NW¼NW¼ sec.19, T.2 N., R.12 E., Wasco County, Hydrologic Unit 17070105, on left bank 0.1 mi (0.2 km) downstream from West Fork Mosier Creek, 2.5 mi (4.0 km) southeast of Mosier, and at mile 3.0 (4.8 km).

DRAINAGE AREA.--41.5 mi^2 (107.5 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1963 to September 1981 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 425 ft (130 m), from topographic map. Prior to July 22, 1976, water-stage recorder at site 20 ft (6.1 m) upstream at datum 3.57 ft (1.088 m) higher. July 22, 1976, to Dec. 12, 1977, water-stage recorder at site 20 ft (6.1 m) upstream at datum 1.57 ft (0.479 m) higher.

REMARKS.--Records excellent. No regulation. Several small pumping diversions for irrigation above station.

AVERAGE DISCHARGE.--18 years, 28.5 ft^3/s (0.807 m^3/s), 20,650 acre-ft/yr (25.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,790 ft^3/s (136 m^3/s) Dec. 23, 1964, gage height, 8.9 ft (2.71 m), from flood profile, from rating curve extended above 1,000 ft^3/s (28.3 m^3/s) on basis of slope-area measurement of peak flow; minimum, 0.35 ft^3/s (0.010 m^3/s) July 25, 26, Aug. 6, 7, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 110 ft^3/s (3.12 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Dec. 3	1930	126	3.57	4.03	1.228	Feb. 16	1730	272	7.70	4.74	1.445
Dec. 25	2100	*856	24.2	*6.31	1.923	Feb. 18	2200	847	24.0	6.29	1.917

Minimum, 0.77 ft^3/s (0.022 m^3/s) Aug. 31.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	3.3	8.2	70	45	71	13	11	4.6	4.6	1.8	1.4
2	1.9	3.7	19	59	42	64	12	11	4.6	4.2	1.6	1.5
3	1.9	3.8	105	51	39	59	12	10	4.4	3.8	1.8	1.4
4	1.9	3.5	79	44	35	54	12	10	4.6	3.7	1.8	1.3
5	1.8	3.2	47	39	32	47	12	9.4	5.0	3.8	1.6	1.3
6	1.8	4.2	34	34	29	42	12	9.1	5.2	4.6	1.5	1.3
7	1.8	7.7	25	31	26	38	11	8.8	6.4	4.6	1.4	1.2
8	1.8	9.1	19	28	24	33	11	8.5	17	4.2	1.3	1.1
9	1.9	7.4	16	25	23	30	12	8.2	26	3.7	1.2	1.1
10	2.0	5.7	14	22	20	28	12	7.7	20	3.5	1.1	1.2
11	2.1	4.6	13	20	19	25	13	7.4	16	3.5	1.1	1.3
12	2.7	4.0	12	19	20	24	16	7.1	14	3.5	1.2	1.2
13	2.8	3.8	12	18	27	23	18	7.1	13	3.2	1.2	1.1
14	2.8	3.8	12	16	57	21	20	7.1	11	3.2	1.2	1.1
15	2.5	3.7	12	15	111	20	24	7.1	10	2.8	1.1	1.1
16	2.4	3.7	15	16	219	20	26	6.9	11	2.7	1.1	1.1
17	2.4	3.5	16	14	229	18	26	6.6	12	2.5	1.1	1.1
18	2.4	3.5	17	13	407	17	25	8.2	9.8	2.4	1.1	1.1
19	2.4	3.5	16	13	683	16	24	8.2	9.1	2.4	1.1	1.4
20	2.4	3.5	15	12	391	17	22	6.9	8.2	2.3	1.2	1.8
21	2.4	4.2	25	14	247	16	20	6.4	7.9	2.1	1.3	2.7
22	2.4	5.5	88	17	189	16	19	6.2	7.9	2.0	1.2	2.8
23	2.4	5.0	89	20	155	14	17	5.9	7.4	2.0	1.1	2.3
24	2.5	4.6	123	21	141	14	16	7.7	6.6	2.0	1.1	2.1
25	2.7	4.2	510	22	118	15	15	9.1	6.2	2.0	1.1	2.0
26	2.8	4.4	437	25	103	13	15	7.1	5.7	2.0	1.2	2.8
27	3.0	4.6	217	31	91	13	14	6.2	5.2	1.8	1.2	5.0
28	2.8	5.2	144	38	80	12	13	5.7	5.0	1.6	1.2	3.2
29	2.8	13	114	43	---	13	12	5.2	4.6	1.8	1.2	2.5
30	2.8	12	103	45	---	13	12	5.0	4.6	2.0	1.4	2.3
31	2.8	---	84	47	---	13	---	4.8	---	1.9	1.4	---
TOTAL	73.0	151.9	2440.2	882	3602	819	486	235.6	273.0	90.4	39.9	52.8
MEAN	2.35	5.06	78.7	28.5	129	26.4	16.2	7.60	9.10	2.92	1.29	1.76
MAX	3.0	13	510	70	683	71	26	11	26	4.6	1.8	5.0
MIN	1.8	3.2	8.2	12	19	12	11	4.8	4.4	1.6	1.1	1.1
AC-FT	145	301	4840	1750	7140	1620	964	467	541	179	79	105

CAL YR 1980 TOTAL 15224.85 MEAN 41.6 MAX 510 MIN .91 AC-FT 30200
WTR YR 1981 TOTAL 9145.80 MEAN 25.1 MAX 683 MIN 1.1 AC-FT 18140

14113200 MOSIER CREEK NEAR MOSIER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)
OCT 18...	1430	142	7.5	10.0	53	11	6.1	6.6	1.6	73	1.1

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)
OCT 18...	2.4	.1	<.10	.020	.25	.010	.27	.27	.040	.050	2.4

DATE	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	TURBIDITY (NTU)	ARSENIC DISSOLVED (UG/L AS AS)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)
OCT 18...	.1	42	115	115	.20	1	1	20	<100	<1	1

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)
OCT 18...	<10	<10	<3	<1	3	4	30	100	<1	<1	2

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, DISSOLVED (UG/L AS NI)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT 18...	<10	<.1	.2	<1	<1	<1	<1	<1	<1	3	10

14118500 WEST FORK HOOD RIVER NEAR DEE, OR

LOCATION.--Lat 45°35'55", long 121°38'05", in SE¼ sec.1, T.1 N., R.9 E., Hood River County, Hydrologic Unit 17070105, on left bank 0.3 mi (0.5 km) upstream from Dead Point Creek, 0.8 mi (1.3 km) northwest of Dee, and at mile 0.4 (0.6 km).

DRAINAGE AREA.--95.6 mi² (247.6 km²).

PERIOD OF RECORD.--September 1913 to February 1916 (incomplete), June 1932 to current year.

REVISED RECORDS.--WDR OR-80-1: 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 802.1 ft (244.48 m) National Geodetic Vertical Datum of 1929. Sept. 1, 1913, to Feb. 12, 1916, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum.

REMARKS.--Records excellent. No regulation. Dee Irrigation District canal diverts from right bank about 6 mi (10 km) above station for irrigation above station and in Middle Fork basin. Diversions from Green Point Creek basin above station for irrigation near Oak Grove; water from two of these diversions is carried in Hood River Irrigation District canal.

AVERAGE DISCHARGE.--50 years (water years 1914, 1933-81), 557 ft³/s (15.77 m³/s), 403,500 acre-ft/yr (498 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined, Dec. 22, 1964, gage height, 27.0 ft (8.23 m), from floodmarks; maximum daily, 15,000 ft³/s (425 m³/s) Dec. 23, 1964; minimum, 93 ft³/s (2.63 m³/s) Aug. 22, 1941.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,100 ft³/s (116 m³/s) and maximum discharge (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 25	2200	*9,680	274	*12.29	3.746	Feb. 18	2100	5,590	158	9.46	2.883
Feb. 16	1000	5,620	159	9.48	2.890						

Minimum, 118 ft³/s (3.34 m³/s) Oct. 22-24.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	171	626	857	356	544	582	595	289	317	180	181
2	135	236	1370	753	345	511	509	537	281	299	178	157
3	137	223	3220	676	337	486	507	492	279	292	175	145
4	137	208	1840	611	327	473	464	484	307	285	174	143
5	134	176	1180	563	321	443	506	461	348	286	172	141
6	135	360	874	522	310	421	495	429	422	284	173	139
7	132	1230	685	494	303	405	468	449	428	332	176	142
8	137	1560	572	467	297	387	588	426	1600	287	177	143
9	135	1230	498	441	297	372	698	410	1990	261	189	143
10	129	789	471	417	283	360	593	390	1180	251	185	141
11	129	561	449	399	309	349	607	385	854	240	176	136
12	137	440	431	386	750	341	589	361	734	233	173	136
13	149	370	410	370	847	338	534	346	771	247	170	133
14	139	330	410	357	1350	327	509	357	648	233	167	131
15	130	303	498	345	1580	328	510	420	563	227	164	133
16	127	276	555	336	3790	358	575	387	640	226	161	137
17	124	264	567	330	2610	334	575	361	661	225	158	139
18	122	289	534	327	3540	323	607	407	586	220	156	142
19	121	279	479	318	3430	314	658	419	913	216	158	161
20	122	271	506	315	1970	310	645	383	735	212	159	143
21	122	684	753	351	1360	305	678	373	620	207	153	188
22	119	856	3310	393	1060	326	879	363	652	201	149	173
23	119	585	2230	409	890	318	939	347	618	198	151	150
24	120	476	2550	440	877	319	1010	376	521	195	151	142
25	132	428	7390	409	767	418	734	501	464	198	145	147
26	136	403	4460	429	694	382	613	422	425	198	143	177
27	138	485	2570	445	634	355	539	368	389	199	143	330
28	128	564	1650	420	585	340	558	341	363	197	144	215
29	126	934	1280	401	---	387	585	329	342	193	146	214
30	126	795	1290	385	---	433	617	325	335	185	157	188
31	125	---	1010	370	---	651	---	304	---	183	150	---
TOTAL	4046	15776	44668	13736	30219	11958	18371	12548	18958	7327	5053	4790
MEAN	131	526	1441	443	1079	386	612	405	632	236	163	160
MAX	149	1560	7390	857	3790	651	1010	595	1990	332	189	330
MIN	119	171	410	315	283	305	464	304	279	183	143	131
AC-FT	8030	31290	88600	27250	59940	23720	36440	24890	37600	14530	10020	9500

CAL YR 1980 TOTAL 204761 MEAN 559 MAX 7390 MIN 119 AC-FT 406100
WTR YR 1981 TOTAL 187450 MEAN 514 MAX 7390 MIN 119 AC-FT 371800

14118500 WEST FORK HOOD RIVER NEAR DEE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
MAY 27...	1300	424	40	7.3	10.5	10.8	K2	15	.00	4.0	1.2

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)
MAY 27...	3.6	.7	21	<5.0	.6	<.1	<.10	.110	.43	.43

DATE	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAY 27...	2.2	.010	.020	2.0	17	41	41	1	1.1	90

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO MAY 1981

DATE	MAY 27,81
TIME	1300
TOTAL CELLS/ML	290
DIVERSITY: DIVISION	0.0
.CLASS	0.0
..ORDER	1.6
...FAMILY	1.9
....GENUS	2.4

ORGANISM	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)		
.BACILLARIOPHYCEAE		
..ACHNANTHALES		
...ACHNANTHACEAE		
....ACHNANTHES	96#	33
....COCCONEIS	14	5
..FRAGILARIALES		
...FRAGILARIACEAE		
....HANNAEA	28	10
....SYNEDRA	55#	19
..NAVICULALES		
...GOMPHONEMACEAE		
....GOMPHONEMA	55#	19
...NAVICULACEAE		
....NAVICULA	41	14

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

14120000 HOOD RIVER AT TUCKER BRIDGE, NEAR HOOD RIVER, OR

LOCATION.--Lat 45°39'20", long 121°32'50", in SE¼ sec.15, T.2 N., R.10 E., Hood River County, Hydrologic Unit 17070105, on right bank 25 ft (8 m) downstream from Tucker Bridge, 0.5 mi (0.8 km) upstream from Odell Creek, 4.0 mi (6.4 km), southwest of town of Hood River, and at mile 6.1 (9.8 km).

DRAINAGE AREA.--279 mi² (723 km²).

PERIOD OF RECORD.--October 1897 to December 1899, September 1913 to September 1914, August 1915 to September 1917, January 1965 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1318: 1899. WSP 1935: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 383.2 ft (116.80 m) National Geodetic Vertical Datum of 1929 (Oregon State Highway Department bench mark). Prior to July 23, 1915, nonrecording gage at bridge at various datums. July 23 to Dec. 21, 1915, water-stage recorder at site 0.8 mi (1.3 km) upstream at different datum. January 1916 to September 1917, nonrecording gage at bridge at different datum. Jan. 16 to July 23, 1965, nonrecording gage at bridge.

REMARKS.--Records good. Some daily fluctuation caused by diversion dam above station and sawmill at Dee. Diversions for irrigation above station.

AVERAGE DISCHARGE.--21 years (water years 1898-99, 1914, 1916-17, 1966-81), 1,084 ft³/s (30.70 m³/s), 785,400 acre-ft/yr (968 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,300 ft³/s (632 m³/s) Dec. 13, 1977, gage height, 15.59 ft (4.752 m); minimum recorded, 136 ft³/s (3.85 m³/s) Sept. 16, 1915, caused by temporary storage behind dam at Dee.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 20.6 ft (6.28 m), present datum, discharge, 33,200 ft³/s (940 m³/s), from rating curve extended above 1,500 ft³/s (42.5 m³/s) on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft³/s (127 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 3	1200	5,220	148	8.13	2.478	Feb. 16	1130	10,500	297	10.60	3.231
Dec. 22	0830	5,020	142	8.01	2.441	Feb. 18	2200	11,700	331	11.07	3.374
Dec. 25	a2400	*20,400	578	b*14.74	4.493	June 9	0230	4,610	131	7.74	2.359

Minimum, 229 ft³/s (6.49 m³/s) Aug. 27.

a About.
b From floodmark.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	342	370	834	1880	842	1330	1020	1170	609	566	324	363
2	329	469	1890	1660	821	1230	941	1030	570	516	322	332
3	338	453	4320	1530	808	1170	941	953	555	502	319	300
4	342	445	2560	1430	788	1130	892	941	589	502	309	295
5	333	394	1750	1340	780	1050	941	908	669	537	302	282
6	340	572	1320	1260	763	1020	932	864	795	559	312	270
7	348	1720	1030	1200	751	987	896	864	791	563	337	290
8	348	1950	886	1140	739	953	995	832	2740	482	353	292
9	329	1490	800	1080	739	928	1150	804	3380	440	377	300
10	316	982	767	1030	706	908	1020	782	1930	421	380	287
11	327	751	743	992	732	892	1040	764	1400	400	358	268
12	337	637	717	963	1300	876	1060	730	1170	397	363	270
13	344	572	689	926	1510	864	987	709	1210	421	372	261
14	338	536	679	904	2300	841	957	713	1030	394	369	254
15	335	507	788	877	2600	851	961	791	932	383	358	263
16	325	482	847	859	6920	880	1010	747	1030	394	347	287
17	316	466	855	851	4660	832	1020	709	1070	409	327	292
18	312	491	817	847	6900	809	1050	791	974	406	317	329
19	312	480	755	825	7120	791	1130	823	1500	400	337	340
20	314	469	800	821	4460	782	1110	743	1230	389	329	275
21	310	922	1150	935	3130	769	1150	726	1030	386	295	347
22	310	1200	4380	935	2590	795	1470	709	1050	369	285	353
23	310	804	2990	931	2270	773	1650	689	1040	361	300	327
24	312	689	3610	931	2320	773	1780	747	908	355	312	297
25	337	640	14000	890	2060	904	1310	941	832	361	285	302
26	338	621	8000	945	1780	851	1100	855	769	363	268	361
27	338	679	5000	973	1570	800	1000	747	701	380	249	730
28	318	792	3500	949	1450	778	1050	681	649	386	247	478
29	316	1190	2700	908	---	846	1120	665	617	369	258	430
30	314	1020	2780	881	---	892	1160	677	605	342	273	392
31	314	---	2200	859	---	1080	---	641	---	334	270	---
TOTAL	10142	22793	74157	32552	63409	28385	32843	24746	32375	13087	9854	9867
MEAN	327	760	2392	1050	2265	916	1095	798	1079	422	318	329
MAX	348	1950	14000	1880	7120	1330	1780	1170	3380	566	380	730
MIN	310	370	679	821	706	769	892	641	555	334	247	254
AC-FT	20120	45210	147100	64570	125800	56300	65140	49080	64220	25960	19550	19570

CAL YR 1980	TOTAL	363300	MEAN 993	MAX 14000	MIN 253	AC-FT	720600	
WTR YR 1981	TOTAL	354210	MEAN 970	MAX 14000	MIN 247	AC-FT	702600	

NOTE.--No gage-height record Dec. 25-29.

14120000 HOOD RIVER AT TUCKER BRIDGE, NEAR HOOD RIVER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
MAY 27...	1100	756	50	7.4	10.0	11.1	K16	18	.00	5.9	.8

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)
MAY 27...	4.0	.9	23	1.1	.7	<.1	<.10	.070	.75	.080	.87

DATE	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAY 27...	2.3	.010	.030	1.5	22	49	49	8	16	28

14120000 HOOD RIVER AT TUCKER BRIDGE, NEAR HOOD RIVER, OR--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO MAY 1981

DATE	MAY 27,81
TIME	1100
TOTAL CELLS/ML	7600
DIVERSITY: DIVISION	0.5
.CLASS	0.5
..ORDER	1.6
...FAMILY	1.7
....GENUS	1.8

ORGANISM	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)		
.BACILLARIOPHYCEAE		
..ACHNANTHALES		
...ACHNANTHACEAE		
....ACHNANTHES	96	1
..BACILLARIALES		
...NITZSCHIACEAE		
....NITZSCHIA	*	0
..FRAGILARIALES		
...FRAGILARIACEAE		
....DIATOMA	55	1
....FRAGILARIA	*	0
....HANNAEA	220	3
....SYNEDRA	250	3
..NAVICULALES		
...GOMPHONEMACEAE		
....GOMPHONEMA	*	0
...NAVICULACEAE		
....NAVICULA	41	1
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHAMAESIPHONALES		
...CHAMAESIPHONACEAE		
....ENTOPHYSALIS	5100#	68
..CHROOCOCCALES		
...CHROOCOCCACEAE		
....AGMENELLUM	330	4
..NOSTOCALES		
...HAMMATOIDEACEAE		
....RAPHIDIOPSIS	110	1
...NOSTOCACEAE		
....ANABAENA	380	5
..OSCILLATORIALES		
...OSCILLATORIACEAE		
....OSCILLATORIA	910	12

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

14128600 COLUMBIA RIVER AT STEVENSON, WA

LOCATION.--Lat 45°41'58", long 121°52'02", in NW¼SE¼ sec.36, T.3 N., R.7½ E., Skamania County, Hydrologic Unit 17070105, on right bank 0.9 mi (1.4 km) east of Stevenson, and at mile 151.3 (243.4 km).

DRAINAGE AREA.--239,800 mi² (621,100 km²), approximately.

PERIOD OF RECORD.--October 1973 to current year (gage heights only).

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

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 79.79 ft (24.320 m) June 20, 1974; minimum, 70.81 ft (21.583 m) Nov. 11, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 79.19 ft (24.137 m) June 2; minimum, 71.60 ft (21.824 m) Jan. 25.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	76.61	75.61	75.68	76.60	75.28	76.01	75.97	72.92	74.37	77.17	76.10	76.70
2	75.64	75.09	75.04	76.46	74.13	75.07	76.58	73.50	75.02	78.12	76.65	77.17
3	76.49	74.33	75.49	74.75	73.14	73.99	76.47	74.29	75.61	77.59	76.19	76.80
4	76.41	75.36	75.91	74.95	73.18	73.98	76.69	73.42	75.09	77.23	74.61	75.91
5	76.21	74.35	75.23	74.55	72.64	73.47	76.89	74.24	75.65	76.64	74.32	75.46
6	75.10	72.77	74.43	74.83	73.37	74.08	76.99	75.13	75.79	77.66	74.01	75.55
7	75.17	74.05	74.70	75.19	73.77	74.58	76.86	75.13	75.57	76.86	74.46	75.39
8	75.75	73.71	74.70	75.09	74.16	74.67	75.72	73.64	74.79	76.50	74.15	75.35
9	76.03	74.57	75.39	74.92	73.45	73.96	76.16	73.38	74.76	76.46	74.20	75.39
10	76.35	74.49	75.44	76.23	72.75	74.42	75.88	73.28	74.38	76.46	75.32	75.94
11	76.62	75.43	75.97	76.86	74.06	75.62	76.01	73.39	74.70	76.67	73.51	74.91
12	76.68	73.50	75.25	77.23	74.74	76.35	76.57	73.61	75.09	76.37	73.94	75.20
13	74.44	72.96	73.46	77.14	73.91	75.91	76.73	73.79	75.28	77.01	75.02	75.96
14	75.62	73.74	74.37	76.83	74.08	75.46	76.64	74.88	75.60	76.30	74.74	75.63
15	76.38	73.65	74.76	76.78	75.13	76.03	76.23	73.29	74.73	75.81	74.22	74.82
16	76.13	74.46	75.04	76.56	74.59	75.54	76.44	74.58	75.51	76.30	75.30	75.73
17	76.38	74.24	75.27	76.96	74.58	75.86	76.89	73.74	75.26	76.33	73.56	74.86
18	76.33	74.71	75.47	76.93	75.69	76.22	76.56	74.11	75.17	75.94	73.01	74.51
19	75.82	74.34	75.01	76.98	75.45	76.21	76.33	73.69	75.02	76.70	74.08	75.27
20	75.76	72.91	74.18	76.80	74.97	75.86	76.40	73.99	75.19	76.64	73.78	75.12
21	75.98	73.54	74.84	76.97	74.15	75.54	75.95	73.60	74.48	76.30	74.44	75.62
22	76.32	74.70	75.80	77.05	75.91	76.31	76.84	73.61	75.10	75.74	73.43	74.40
23	76.15	74.10	75.32	76.41	74.50	75.16	76.87	74.38	75.63	75.34	72.04	73.57
24	76.02	73.70	74.79	75.92	72.82	74.15	77.14	75.14	76.15	75.17	73.43	74.21
25	76.11	74.63	75.42	76.67	73.14	74.78	77.54	74.93	76.22	74.53	71.60	72.88
26	76.09	73.78	75.04	76.63	75.20	75.96	77.48	75.80	76.59	76.73	73.16	74.96
27	75.72	73.40	74.40	76.23	74.16	75.03	77.18	74.51	75.95	76.02	73.78	74.62
28	76.03	74.59	75.32	76.99	73.21	74.82	76.94	74.89	76.14	76.16	73.23	74.60
29	76.00	74.43	75.26	76.90	74.66	75.84	76.79	74.44	75.51	76.12	74.14	75.01
30	76.05	74.12	75.06	76.50	74.85	75.42	76.61	74.04	75.56	77.31	75.87	76.52
31	76.44	73.98	75.09	---	---	---	76.39	75.07	75.82	76.86	75.59	76.11
MONTH	76.68	72.77	75.07	77.23	72.64	75.21	77.54	72.92	75.35	78.12	71.60	75.30

14128600 COLUMBIA RIVER AT STEVENSON, WA--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	76.68	74.70	75.41	76.28	74.83	75.48	77.10	74.09	75.66	76.72	75.43	75.95
2	75.52	73.48	74.40	77.03	74.44	75.73	77.10	74.10	75.81	76.37	74.90	75.68
3	75.14	72.44	73.50	76.99	74.52	75.89	77.16	74.57	75.87	76.53	75.77	76.17
4	75.52	73.73	74.60	76.39	73.88	74.19	77.16	76.18	76.72	77.30	75.79	76.50
5	76.57	74.23	75.34	76.48	73.24	74.72	77.02	74.31	75.47	76.94	76.48	76.68
6	76.68	73.65	75.15	76.92	74.79	75.96	76.13	73.42	74.52	77.89	76.33	77.06
7	76.76	74.87	75.87	76.83	75.59	76.31	76.77	75.13	75.92	78.04	77.03	77.42
8	76.58	74.28	75.28	76.16	73.94	74.48	76.77	74.95	75.94	77.61	75.68	76.58
9	76.25	73.71	75.06	75.59	73.24	74.14	77.21	75.19	76.36	76.22	74.16	75.15
10	76.43	73.72	74.93	75.17	73.33	74.15	77.02	75.42	76.38	77.09	74.87	75.97
11	76.35	73.82	75.03	74.95	73.23	73.93	76.52	74.50	75.42	76.55	75.16	75.83
12	76.80	74.01	75.14	74.96	73.30	74.01	76.10	73.97	74.68	76.96	74.35	75.55
13	76.95	74.84	76.13	74.94	73.40	74.06	76.61	73.43	75.14	76.56	73.95	74.90
14	76.62	74.34	75.00	75.17	73.35	74.04	77.02	73.80	75.50	76.72	74.66	75.57
15	75.15	74.32	74.79	75.06	73.27	74.01	77.07	75.43	76.48	76.37	73.92	75.23
16	76.97	74.72	75.62	74.98	73.15	74.00	77.07	75.55	76.36	77.38	76.15	76.73
17	77.31	74.74	76.27	74.89	73.34	74.09	77.10	75.47	76.36	76.98	75.89	76.55
18	77.73	74.68	76.06	74.93	73.25	74.02	76.52	74.24	74.95	77.64	75.86	76.80
19	78.05	76.06	77.17	75.15	73.35	74.13	74.56	73.17	73.82	77.69	76.14	77.01
20	77.93	75.56	76.77	75.50	73.56	74.29	76.59	73.34	74.95	77.56	76.29	77.08
21	77.21	75.61	76.22	76.17	74.81	75.36	76.42	74.61	75.58	77.41	74.79	76.10
22	75.94	74.32	74.79	76.47	74.48	75.11	77.30	75.45	76.32	77.70	75.57	77.17
23	77.10	73.93	75.54	76.39	75.30	75.84	76.81	74.27	75.34	76.45	74.35	75.45
24	76.81	74.53	75.70	76.72	73.66	75.13	77.34	75.54	76.53	77.02	75.40	76.15
25	76.88	74.44	75.78	76.76	73.90	75.32	77.48	75.71	76.54	77.05	75.40	76.37
26	76.49	73.49	74.72	76.80	74.41	75.71	77.14	74.12	75.26	77.19	74.25	75.95
27	77.17	74.44	75.70	77.33	74.10	75.66	75.69	74.52	75.03	77.63	76.26	77.14
28	77.17	75.46	76.05	77.36	75.40	76.39	76.21	74.77	75.38	76.33	75.00	75.78
29	---	---	---	77.01	75.27	76.34	76.50	75.06	75.83	76.40	75.51	75.94
30	---	---	---	76.96	74.15	75.72	76.80	75.27	75.82	78.11	75.58	77.04
31	---	---	---	77.10	74.66	75.90	---	---	---	77.96	77.28	77.51
MONTH	78.05	72.44	75.43	77.36	73.15	74.97	77.48	73.17	75.66	78.11	73.92	76.29

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	78.69	77.32	77.96	77.18	75.33	75.87	77.16	74.86	75.62	76.02	73.65	74.97
2	79.19	78.51	78.85	76.21	74.84	75.26	76.33	75.60	75.89	76.49	73.52	74.87
3	78.85	78.04	78.31	76.40	75.22	76.05	76.33	73.57	74.92	76.51	74.32	75.56
4	78.69	77.73	78.20	76.41	75.66	76.05	76.97	73.45	75.32	76.38	74.28	75.41
5	79.00	78.11	78.69	76.47	75.47	76.08	77.04	74.22	75.54	76.25	73.81	74.93
6	79.13	77.85	78.45	76.97	76.42	76.66	76.83	74.31	75.43	76.25	74.96	75.37
7	78.96	78.21	78.59	77.05	76.25	76.53	77.09	75.45	76.11	75.88	73.98	74.75
8	78.50	76.85	77.67	76.57	75.47	75.89	77.10	75.26	76.34	73.89	71.89	72.62
9	76.92	76.34	76.60	76.43	75.69	76.13	76.66	73.83	74.53	74.17	71.91	72.99
10	78.02	76.53	77.07	76.98	75.40	76.26	76.71	73.09	74.97	75.21	73.03	74.06
11	78.91	77.22	78.42	77.00	75.06	76.10	76.14	73.22	74.23	76.10	73.90	74.94
12	78.19	77.67	77.93	77.02	74.51	75.30	76.50	72.45	73.79	76.58	75.32	75.85
13	78.06	77.29	77.69	77.29	73.89	75.70	76.76	74.73	75.63	76.36	74.62	75.37
14	78.30	77.06	77.40	77.20	74.41	75.54	77.07	75.19	76.10	75.08	72.59	73.95
15	78.34	77.76	78.02	77.45	74.04	75.87	76.89	75.65	76.19	75.04	73.19	74.03
16	78.15	77.31	77.65	77.40	75.06	76.20	76.55	75.62	75.85	75.76	72.19	73.91
17	78.51	77.65	78.13	77.18	75.50	76.38	75.84	74.16	74.91	75.59	72.45	74.07
18	78.65	77.57	78.30	77.05	75.03	75.81	75.93	73.44	74.76	75.69	72.59	74.00
19	78.19	76.94	77.73	76.22	73.78	74.89	76.97	74.90	75.86	75.70	73.33	74.43
20	77.28	76.61	76.92	77.24	74.54	75.91	76.85	75.21	76.03	75.06	73.44	74.04
21	76.94	76.41	76.61	77.26	74.10	75.78	76.27	74.74	75.57	75.84	72.58	73.95
22	76.81	76.09	76.55	77.08	74.18	75.67	76.50	74.07	75.17	75.27	74.09	74.80
23	77.09	76.19	76.57	76.87	74.04	75.76	76.34	73.78	74.89	75.60	73.59	74.66
24	77.69	76.28	77.07	76.91	73.42	75.26	74.95	72.66	73.54	75.58	73.27	74.46
25	78.16	77.42	77.79	76.74	73.91	75.08	75.80	73.37	74.51	76.66	73.69	75.54
26	77.63	76.92	77.32	75.96	73.82	74.77	75.86	73.76	74.67	76.26	74.34	75.12
27	77.87	77.38	77.61	76.25	73.33	74.93	76.44	75.16	75.75	75.57	73.44	74.77
28	77.51	76.27	77.11	76.43	73.92	75.48	76.50	74.42	75.50	75.94	72.28	73.66
29	76.98	74.38	75.67	76.66	74.10	75.50	76.31	73.45	74.60	75.94	74.24	74.95
30	77.35	74.26	75.71	76.80	73.50	75.10	75.44	73.64	74.15	75.70	73.81	74.71
31	---	---	---	77.37	75.38	76.55	76.03	72.52	74.01	---	---	---
MONTH	79.19	74.26	77.55	77.45	73.33	75.75	77.16	72.45	75.17	76.66	71.89	74.56
YEAR	79.19	71.60	75.52									

14128860 COLUMBIA RIVER AT BONNEVILLE DAM, OR

LOCATION.--Lat 45°38'36", long 121°56'21", in sec.22, T.2 N., R.7 E., Multnomah County, Hydrologic Unit 17080001, on north shore of Bradford Island, 200 ft (60 m) upstream from Bonneville Dam, at mile 146.1 (235.1 km).

DRAINAGE AREA.--239,900 mi² (621,300 km²), approximately.

PERIOD OF RECORD.--May to September 1981 (gage heights only).

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

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR CURRENT YEAR.--Maximum gage height during period May to September, 76.61 ft (23.351 m) May 20; minimum, 71.15 ft (21.687 m) Sept. 9.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1										---	---	---
2										---	---	---
3										---	---	---
4										---	---	---
5										---	---	---
6										---	---	---
7										---	---	---
8										---	---	---
9										---	---	---
10										---	---	---
11										---	---	---
12										---	---	---
13										---	---	---
14										75.63	73.29	74.35
15										75.49	72.75	74.04
16										76.33	74.84	75.55
17										76.25	74.94	75.76
18										76.40	74.92	75.67
19										76.47	75.13	75.81
20										76.61	75.50	76.18
21										76.46	73.51	74.97
22										76.52	74.73	76.02
23										75.48	73.30	74.37
24										75.60	74.01	74.85
25										75.93	74.45	75.23
26										75.91	72.76	74.65
27										76.03	74.74	75.34
28										74.79	72.77	73.57
29										74.22	72.64	73.45
30										75.66	72.81	74.37
31										75.77	74.33	74.80
MONTH										76.61	72.64	74.94

14128860 COLUMBIA RIVER AT BONNEVILLE DAM, OR--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	75.56	74.38	75.01	75.37	73.91	74.52	75.47	73.72	74.66	75.50	72.92	74.38
2	76.35	75.46	76.02	74.83	73.43	73.95	75.68	74.77	75.17	76.04	72.83	74.30
3	76.25	75.07	75.62	75.20	74.01	74.83	75.50	72.52	74.03	76.02	73.65	75.01
4	76.20	74.71	75.44	75.09	74.41	74.83	76.13	72.50	74.47	75.88	73.57	74.84
5	76.40	74.86	75.91	75.46	74.20	74.95	76.23	73.19	74.59	75.74	73.07	74.36
6	76.02	74.57	75.30	75.61	74.86	75.31	75.98	73.10	74.43	75.88	74.51	74.96
7	76.37	75.43	75.80	75.41	74.27	74.68	75.88	74.14	74.91	75.53	73.46	74.30
8	75.57	73.32	74.32	74.59	73.30	73.83	76.17	74.41	75.42	73.27	71.16	71.97
9	73.44	71.98	72.60	74.40	73.57	74.02	75.28	73.05	73.79	73.61	71.15	72.31
10	74.05	72.28	72.95	75.50	73.25	74.33	76.04	72.17	74.27	74.87	72.41	73.57
11	75.56	73.23	74.78	75.90	73.64	74.87	75.20	72.32	73.35	75.72	73.31	74.53
12	74.52	73.91	74.33	75.82	73.43	74.22	75.95	71.46	72.93	76.16	74.85	75.44
13	74.47	73.66	74.12	76.13	72.89	74.65	76.10	73.90	74.89	76.03	74.25	74.94
14	75.20	73.37	73.99	75.83	72.98	74.23	76.27	74.53	75.43	74.65	71.87	73.37
15	75.29	74.78	75.05	76.11	72.74	74.56	75.85	74.59	75.20	74.64	72.57	73.51
16	75.95	74.51	75.07	76.09	73.47	74.67	75.40	74.69	74.94	75.39	71.66	73.42
17	76.37	75.39	75.93	76.04	73.81	75.05	74.96	73.26	74.10	75.13	71.72	73.47
18	76.50	75.29	76.11	75.90	74.14	74.91	75.24	72.64	74.07	75.11	71.74	73.30
19	75.83	74.07	75.23	75.50	72.85	74.05	76.32	74.17	75.20	75.12	72.62	73.89
20	74.49	73.55	74.02	76.11	73.67	74.79	76.22	74.58	75.43	74.61	72.85	73.60
21	74.07	73.42	73.69	75.95	72.74	74.57	75.70	74.13	74.98	75.45	71.75	73.43
22	73.87	72.94	73.58	75.79	73.05	74.69	76.00	73.50	74.61	74.86	73.38	74.26
23	74.46	73.16	73.69	75.80	72.90	74.66	75.81	73.08	74.20	75.08	72.90	74.09
24	75.51	73.54	74.66	75.59	72.12	74.07	74.36	71.79	72.83	75.10	72.61	73.91
25	75.95	75.19	75.58	75.60	72.49	73.96	75.25	72.62	73.88	76.21	73.06	75.02
26	75.63	74.54	75.08	75.32	72.92	73.95	75.24	72.94	73.98	75.69	73.87	74.69
27	76.01	75.26	75.73	75.02	72.38	73.89	75.86	74.47	75.13	75.17	72.97	74.34
28	75.83	74.15	75.30	75.65	72.49	74.28	75.94	73.71	74.88	75.55	71.81	73.23
29	75.55	72.44	74.02	75.74	72.78	74.42	75.82	72.60	73.92	75.51	73.73	74.46
30	76.02	72.49	74.25	75.71	72.40	73.92	74.86	73.12	73.60	75.27	73.29	74.24
31	---	---	---	76.32	74.37	75.49	75.57	71.74	73.40	---	---	---
MONTH	76.50	71.98	74.77	76.32	72.12	74.49	76.32	71.46	74.41	76.21	71.15	74.04
YEAR	76.61	71.15	74.49									

14128870 COLUMBIA RIVER BELOW BONNEVILLE DAM, OR

LOCATION.--Lat 45°38'20", long 121°57'16", in sec.21, T.2 N., R.7 E., Multnomah County, Hydrologic Unit 17080001, on left bank 0.5 mi (0.8 km) upstream from Tanner Creek, 0.4 mi (0.6 km) downstream from Bonneville Dam powerhouse, and at mile 145.0 (233.3 km).

DRAINAGE AREA.--239,900 mi² (621,300 km²), approximately.

PERIOD OF RECORD.--May to September 1981 (gage heights only).

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

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR CURRENT YEAR.--Maximum gage height during period May to September, 30.40 ft (9.266 m) June 11; minimum recorded, 7.55 ft (2.301 m) Sept. 12.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1										---	---	---
2										---	---	---
3										---	---	---
4										---	---	---
5										---	---	---
6										---	---	---
7										21.98	21.25	21.67
8										21.65	19.50	20.76
9										19.53	16.20	18.02
10										18.20	15.64	16.23
11										18.78	17.65	18.17
12										19.51	18.30	18.95
13										19.46	18.23	18.79
14										18.98	17.48	18.54
15										18.80	18.03	18.39
16										19.33	17.15	18.80
17										17.51	15.81	16.35
18										20.08	15.73	18.08
19										20.59	17.10	19.11
20										19.46	15.76	17.65
21										19.02	17.25	18.12
22										21.41	16.26	19.06
23										20.66	17.78	18.43
24										20.82	17.80	19.36
25										20.94	18.89	19.45
26										21.59	17.68	19.10
27										23.89	21.59	22.56
28										24.55	23.54	24.00
29										25.73	24.14	24.67
30										25.94	25.39	25.70
31										26.90	25.70	26.27
MONTH										26.90	15.64	19.85

14128870 COLUMBIA RIVER BELOW BONNEVILLE DAM, OR--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.31	26.70	27.05	20.67	19.49	19.87	19.32	15.38	17.22	12.99	11.95	12.44
2	27.82	27.22	27.46	19.99	18.98	19.57	15.95	14.50	14.96	12.79	11.98	12.34
3	27.60	26.84	27.16	19.85	18.93	19.47	16.46	14.53	15.58	12.43	11.64	12.04
4	27.68	26.50	27.03	19.58	18.94	19.23	17.74	14.85	15.74	12.29	11.51	11.92
5	28.08	26.25	26.94	19.05	18.41	18.82	17.83	16.30	16.79	12.24	11.14	11.88
6	28.19	27.01	27.98	21.46	18.92	19.80	18.05	16.07	17.14	---	---	---
7	27.78	26.49	27.09	22.64	21.48	22.16	19.94	16.05	18.52	---	---	---
8	28.65	27.74	28.26	23.45	22.56	23.08	19.92	15.75	17.43	---	---	---
9	29.82	28.39	29.12	23.49	23.15	23.27	16.26	12.33	14.43	12.63	11.77	12.22
10	30.12	29.73	29.94	23.40	22.07	23.13	14.81	12.86	14.20	11.80	10.10	10.83
11	30.40	29.23	29.82	22.02	19.18	19.91	15.14	12.86	14.65	11.05	8.18	9.96
12	29.43	28.92	29.24	19.18	17.22	17.80	15.27	14.66	15.11	10.16	7.55	9.15
13	29.04	28.81	28.92	19.04	16.18	17.58	14.96	14.28	14.66	10.31	9.04	9.84
14	28.86	28.01	28.45	19.44	18.91	19.24	16.60	12.31	14.15	12.82	10.06	11.71
15	28.05	27.02	27.69	21.16	18.52	19.50	18.10	16.30	17.03	12.56	10.27	11.61
16	26.98	25.59	26.44	21.54	20.26	20.84	18.12	16.49	16.74	12.31	10.17	11.16
17	25.64	25.14	25.36	20.88	19.54	20.14	16.92	15.02	15.49	13.01	11.90	12.43
18	25.29	25.06	25.15	19.73	15.73	16.94	15.13	13.00	14.25	13.56	12.42	13.01
19	26.47	24.94	25.63	15.84	14.71	15.18	14.91	12.62	13.92	13.49	9.86	11.58
20	26.69	26.32	26.54	20.15	14.79	17.66	14.42	11.69	13.12	10.68	8.72	9.72
21	26.65	26.48	26.55	19.24	18.53	18.82	13.91	10.67	12.79	12.69	9.58	10.72
22	26.71	26.45	26.60	18.97	15.91	17.10	14.08	11.67	12.67	12.48	9.79	11.33
23	26.75	26.20	26.50	19.61	16.75	17.76	14.23	12.71	13.47	12.69	11.61	11.94
24	26.25	24.87	25.55	18.91	17.23	18.26	14.04	12.06	13.18	12.21	10.79	11.61
25	25.12	24.85	24.97	19.08	16.16	18.02	13.16	12.40	12.85	12.17	10.46	11.32
26	24.92	24.12	24.66	16.29	14.78	15.59	14.02	12.75	13.47	11.63	9.13	10.04
27	24.15	22.81	23.61	18.69	14.55	16.66	13.88	12.85	13.35	10.18	9.14	9.58
28	22.83	22.51	22.71	19.21	17.82	18.59	13.92	12.72	13.26	10.51	9.26	9.88
29	22.64	21.37	21.88	18.67	17.39	17.92	13.96	12.85	13.41	11.33	10.39	10.89
30	21.52	19.93	20.73	19.25	17.16	18.22	12.80	10.57	11.65	11.63	10.52	10.95
31	---	---	---	19.27	16.55	18.25	12.98	12.13	12.51	---	---	---
MONTH	30.40	19.93	26.50	23.49	14.55	18.98	19.94	10.57	14.64	13.56	7.55	11.19
YEAR	30.40	7.55	18.30									

14128890 COLUMBIA RIVER NEAR BONNEVILLE, OR

LOCATION.--Lat 45°37'35", long 121°58'22", in sec.29, T.2 N., R.7 E., Multnomah County, Hydrologic Unit 17080001, on left bank 0.2 mi (0.3 km) upstream from Moffett Creek, 2.2 mi (3.5 km) downstream from Bonneville Dam, and at mile 143.5 (230.9 km).

DRAINAGE AREA.--239,900 mi² (621,300 km²), approximately.

PERIOD OF RECORD.--October 1973 to September 1981, discontinued (gage heights only).

REVISED RECORDS.--WDR-OR 77-1: 1974-76(m).

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

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 33.12 ft (10.095 m) June 22, 1974; minimum recorded, 6.47 ft (1.972 m) Sept. 30, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum gage height recorded, 27.96 ft (8.522 m) June 9; minimum, 6.91 ft (2.106 m) Sept. 7.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.21	9.07	10.33	10.95	10.17	10.52	12.69	11.30	11.95	21.23	20.95	21.11
2	11.30	8.74	10.38	11.14	10.48	10.81	13.59	11.15	12.42	22.32	20.58	21.26
3	11.89	9.41	10.85	11.24	10.62	10.92	17.18	13.42	16.10	21.52	21.08	21.24
4	11.78	7.95	9.07	11.12	10.72	10.94	18.11	16.45	17.54	21.27	19.66	20.16
5	9.39	7.05	8.39	11.55	10.81	11.15	18.03	16.82	17.37	19.68	18.32	18.93
6	9.46	7.03	8.76	11.40	8.41	10.16	17.56	15.79	16.68	18.85	16.51	17.84
7	10.11	7.74	8.74	13.12	10.57	11.76	15.77	15.25	15.43	19.57	18.18	18.79
8	9.41	7.42	8.42	12.48	11.92	12.17	17.13	14.96	15.92	18.22	16.91	17.78
9	9.59	7.88	9.00	12.38	10.88	11.26	16.16	14.99	15.77	19.14	16.83	18.05
10	9.46	7.61	8.69	12.61	11.29	11.88	16.15	15.02	15.58	18.81	16.83	17.95
11	10.00	7.56	9.01	12.54	11.32	11.88	15.96	14.65	15.36	16.85	15.03	16.00
12	10.89	6.99	9.11	14.75	11.31	12.69	15.95	14.60	15.07	17.30	15.05	16.47
13	8.83	7.39	7.90	15.67	14.50	14.79	15.37	13.78	14.39	17.41	17.21	17.30
14	10.94	7.25	9.63	15.08	11.95	14.17	15.35	12.60	13.41	17.30	17.02	17.14
15	11.21	10.57	10.92	11.92	10.21	10.95	14.66	12.61	13.81	17.24	16.90	17.06
16	11.00	10.41	10.75	10.37	9.93	10.15	14.55	13.83	14.08	18.62	17.10	17.79
17	11.50	10.48	10.88	11.33	10.24	10.68	15.45	13.91	14.29	18.66	14.87	16.61
18	11.81	9.60	11.24	11.87	10.11	11.09	15.62	14.82	15.29	14.87	13.01	13.49
19	11.06	8.90	9.66	13.12	10.95	12.13	15.16	14.16	14.62	16.64	13.33	15.60
20	11.12	8.19	10.33	13.04	12.03	12.58	14.24	13.45	13.84	16.53	14.94	15.46
21	11.26	8.42	10.31	14.76	12.02	13.16	14.03	12.95	13.39	17.47	15.18	16.35
22	10.38	8.81	9.54	15.49	14.24	14.81	15.56	13.56	14.31	18.27	16.54	17.49
23	10.67	8.19	10.00	14.63	13.11	13.84	16.89	15.20	15.76	18.16	16.27	16.98
24	10.90	8.90	10.16	13.51	12.66	13.06	18.44	16.83	17.37	17.63	15.97	16.64
25	11.53	9.45	10.13	13.04	12.36	12.71	20.40	17.72	18.58	17.62	13.12	15.28
26	11.44	8.04	9.68	15.02	12.04	13.53	23.43	20.44	21.89	18.01	12.93	15.66
27	11.18	9.37	10.53	13.18	12.50	12.75	23.84	22.36	23.19	18.63	16.43	17.42
28	11.33	10.29	10.72	12.69	11.76	12.36	24.27	23.35	23.76	17.11	15.43	16.36
29	10.89	9.80	10.53	13.49	11.82	12.65	23.97	21.79	23.42	17.11	15.70	16.70
30	10.71	9.26	10.31	12.71	12.24	12.50	22.91	19.68	21.61	17.44	14.93	16.13
31	10.58	8.97	10.18	---	---	---	22.65	21.20	21.94	17.28	16.46	16.89
MONTH	11.89	6.99	9.81	15.67	8.41	12.14	24.27	11.15	16.59	22.32	12.93	17.35

14128890 COLUMBIA RIVER NEAR BONNEVILLE, OR--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	16.50	15.32	16.19	15.06	13.35	14.09	16.58	15.34	15.67	18.03	17.76	17.87
2	16.68	14.91	15.90	14.95	13.10	14.18	16.62	15.52	15.90	18.12	17.23	17.85
3	17.74	16.59	17.10	16.66	14.83	16.01	16.56	15.77	16.27	19.65	17.81	19.02
4	18.17	17.32	17.81	17.37	15.48	16.59	16.21	14.24	15.14	20.55	19.51	20.03
5	18.96	17.32	18.10	17.27	14.33	15.33	14.80	13.95	14.35	21.11	20.57	20.85
6	18.26	16.67	17.46	16.09	14.85	15.54	14.56	13.79	14.20	21.08	19.49	20.10
7	16.74	15.11	15.56	15.95	13.94	14.50	15.47	13.91	14.90	20.96	19.99	20.61
8	14.90	13.07	14.24	14.27	13.83	14.05	15.55	14.77	15.13	20.59	18.53	19.68
9	17.34	13.55	15.65	15.22	13.52	14.16	17.19	15.11	15.70	18.61	15.50	17.12
10	17.45	16.46	17.12	15.22	13.42	14.55	15.65	14.25	15.27	17.24	15.07	15.63
11	17.73	17.01	17.46	15.21	13.64	14.37	14.31	13.25	13.93	17.90	16.86	17.32
12	16.98	15.43	16.32	14.80	14.08	14.50	13.69	13.15	13.35	18.50	17.41	18.07
13	16.89	15.31	16.32	15.14	14.22	14.64	15.94	13.16	14.38	18.51	17.38	17.86
14	15.09	14.57	14.82	14.78	12.06	13.36	14.15	13.53	13.82	18.01	16.82	17.66
15	15.70	14.42	14.72	13.18	11.69	12.25	14.08	13.60	13.86	17.88	17.12	17.52
16	17.68	14.75	16.10	13.96	11.51	12.76	15.67	13.78	14.67	18.36	16.49	17.86
17	20.72	17.54	18.85	15.71	13.73	14.80	14.59	13.25	14.24	16.75	15.05	15.61
18	20.93	18.98	19.78	15.12	13.45	14.67	13.32	12.92	13.14	19.09	15.05	17.37
19	23.11	20.94	22.03	15.76	14.23	15.10	13.75	13.20	13.50	19.49	16.35	18.20
20	23.11	22.07	22.54	15.72	13.00	14.65	13.65	12.27	12.98	17.98	15.08	16.83
21	22.12	20.44	21.69	13.12	12.34	12.86	13.13	12.59	12.82	18.08	16.53	17.32
22	20.41	19.22	19.63	13.18	12.67	12.89	16.48	12.64	14.68	20.22	15.64	18.23
23	19.22	17.75	18.35	15.10	12.54	14.15	16.49	13.30	15.21	18.19	17.04	17.53
24	18.64	17.88	18.31	14.95	13.26	14.28	15.88	13.24	14.28	19.78	17.03	18.53
25	18.57	17.68	18.09	14.28	13.78	14.05	16.64	15.35	15.96	19.85	17.96	18.45
26	20.21	17.56	18.89	14.69	13.89	14.29	16.70	13.58	15.27	20.54	16.95	18.32
27	17.52	15.97	16.62	15.29	14.43	14.85	17.25	14.06	15.52	22.56	20.42	21.42
28	17.32	15.06	16.15	15.18	13.03	14.01	18.25	16.83	17.49	23.18	22.40	22.70
29	---	---	---	14.73	13.66	14.29	17.86	17.37	17.72	24.22	22.75	23.36
30	---	---	---	15.72	13.52	14.20	18.03	17.65	17.80	24.53	23.88	24.27
31	---	---	---	16.53	15.72	16.05	---	---	---	25.33	24.22	24.81
MONTH	23.11	13.07	17.56	17.37	11.51	14.39	18.25	12.27	14.91	25.33	15.05	18.97

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	25.75	25.00	25.49				---	---	---	12.50	11.59	12.00
2	25.90	25.23	25.69				---	---	---	12.27	11.58	11.90
3	25.62	25.00	25.27				---	---	---	11.97	11.23	11.62
4	25.67	24.98	25.28				16.86	14.25	15.07	11.76	11.00	11.49
5	26.40	24.65	25.43				16.92	15.59	16.03	11.73	10.46	11.44
6	26.58	25.46	26.30				17.17	15.41	16.57	10.77	7.88	9.36
7	26.21	24.94	25.57				18.91	15.42	17.59	10.86	6.91	8.96
8	27.02	26.20	26.64				18.97	15.18	16.66	11.98	10.84	11.43
9	27.96	26.80	27.50				15.56	11.88	13.88	12.25	11.53	11.86
10	---	---	---				14.19	12.35	13.61	11.41	9.53	10.38
11	---	---	---				14.49	12.31	14.04	10.42	7.85	9.42
12	---	---	---				14.62	14.05	14.47	9.84	7.26	8.81
13	---	---	---				14.33	13.79	14.06	9.95	8.72	9.47
14	---	---	---				15.76	11.90	13.59	12.28	9.70	11.28
15	---	---	---				17.22	15.52	16.23	12.03	9.88	11.19
16	---	---	---				17.21	15.78	16.02	11.96	9.80	10.76
17	---	---	---				16.25	14.44	14.88	12.47	11.55	11.97
18	---	---	---				14.52	12.53	13.69	13.00	12.04	12.52
19	---	---	---				14.27	12.17	13.36	12.95	9.49	11.16
20	---	---	---				13.79	11.26	12.62	10.31	8.65	9.36
21	---	---	---				13.31	10.32	12.29	12.17	9.24	10.32
22	---	---	---				13.48	11.25	12.18	11.90	9.46	10.92
23	---	---	---				13.63	12.21	12.92	12.22	11.18	11.50
24	---	---	---				13.44	11.65	12.69	11.75	10.34	11.18
25	---	---	---				12.66	11.94	12.38	11.65	10.07	10.89
26	---	---	---				13.46	12.32	12.98	11.18	8.79	9.67
27	---	---	---				13.33	12.39	12.85	9.81	8.78	9.24
28	---	---	---				13.41	12.26	12.79	10.17	8.95	9.54
29	---	---	---				13.39	12.37	12.92	10.96	10.06	10.50
30	---	---	---				12.39	10.13	11.28	11.18	10.17	10.56
31	---	---	---				12.49	11.72	12.07	---	---	---
MONTH	27.96	24.65	25.91				18.97	10.13	13.91	13.00	6.91	10.69
YEAR	27.96	6.91	14.96									

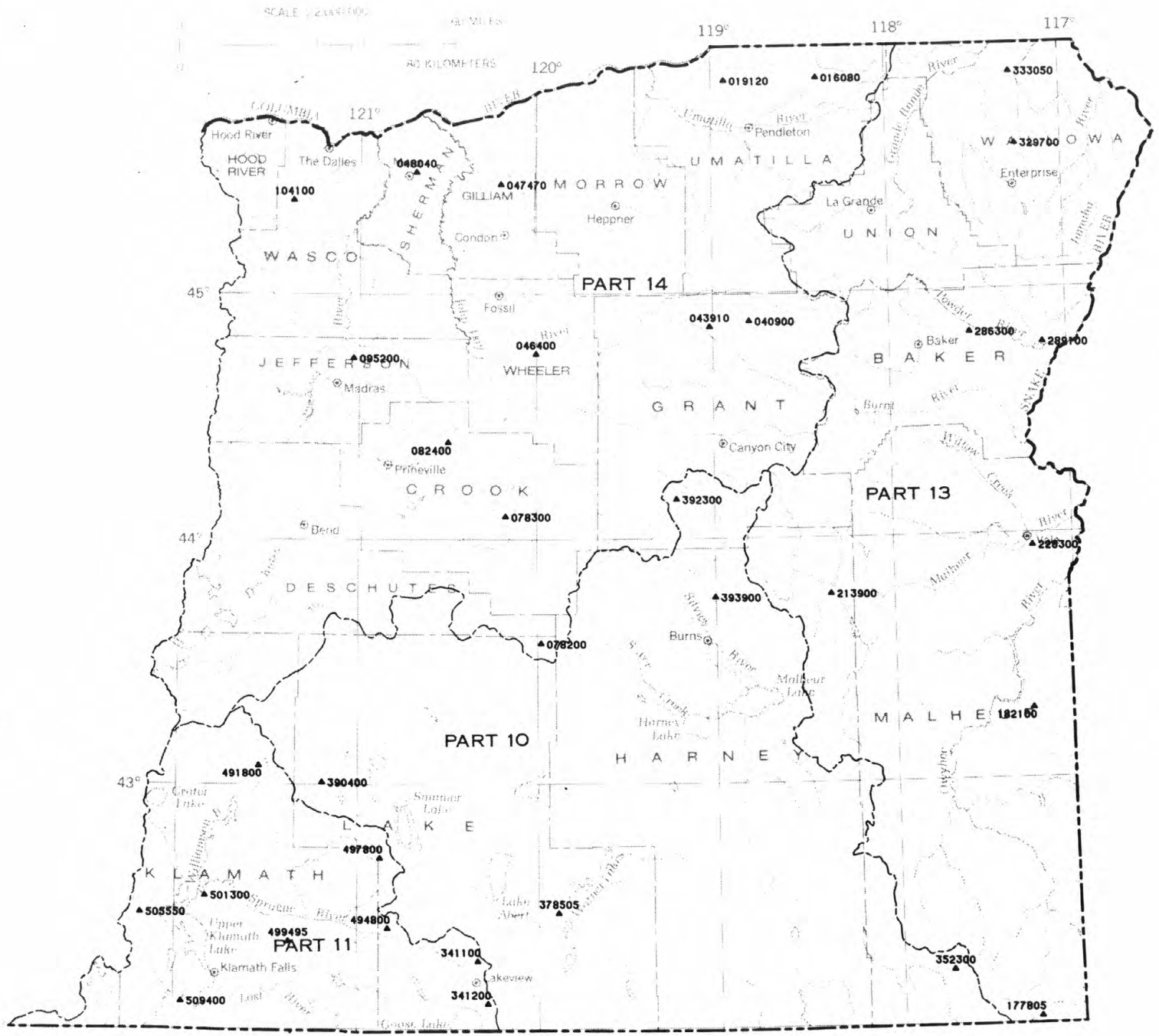


Figure 4. — Map of Eastern Oregon showing location of partial-record stations.

Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (ft)	Discharge (ft^3/s)
		QUINN RIVER BASIN (NEVADA)					
10352300	JACKSON CREEK TRIBUTARY NEAR MCDERMITT, NV (Station discontinued)	Lat 42°14'00", long 117°44'20", in N½ sec.36, T.38 S., R.42 E., Malheur County, at culvert on BLM Star Valley Road 930-0, 15 miles north of McDermitt.	a6.6	1969-77, 1979-81	6- 2-81	-	<1
		WARNER LAKES BASIN					
10378505	MINERS DRAW NEAR PLUSH, OR	Lat 42°29'15", long 119°53'57", in SW¼ sec.33, T.35 S., R.24 E., Lake County, at culvert on Hogback Road, 5.2 miles north of Plush.	15.9	1980-81	-	-	0
		SILVER LAKE BASIN					
10390400	BRIDGE CREEK NEAR THOMPSON RESERVOIR, OR	Lat 43°01'28", long 121°12'04" in SE¼SW¼ sec.29, T.29 S., R.13 E., Lake County, in Fremont National Forest, at culvert on Forest Service road 2800, 7.2 miles northwest of Thompson Reservoir, and 11 miles southwest of town of Silver Lake.	10.6	1965-81	5-25-81	9.62	46
		MALHEUR AND HARNEY LAKES BASIN					
10392300	SILVIES RIVER NEAR SENECA, OR (Station discontinued)	Lat 44°10'30", long 119°12'50", in NW¼NW¼ sec.23, T.16 S., R.29 E., Grant County, in Malheur National Forest, at culvert on Forest Service road 1611, 100 feet downstream from Wickiup Creek, and 12 miles northwest of Seneca.	18.4	1967-81	3-23-81	11.97	48
10393900	DEVINE CANYON NEAR BURNS, OR (Station discontinued)	Lat 43°46'20", long 119°00'15", in NE¼ sec.9, T.21 S., R.31 E., Harney County, at culvert at U.S. Highway 395, at junction with road to Baker Corral, 0.7 mile north of Ochoco National Forest boundary, and 15 miles north of Burns.	4.96	1965-81	3-27-81	11.95	b0.3
		GOOSE LAKE BASIN					
11341100	SALT CREEK NEAR LAKEVIEW, OR (Station discontinued)	Lat 42°17'35", long 120°20'45", in NW¼ sec. 10, T.38 S., R.20 E., Lake County, at culvert on U.S. Highway 395, 1.7 miles upstream from mouth, 2.6 miles north of Warner Valley Junction, and 7.6 miles north of Lakeview.	5.62	1964-81	5-18-81	13.28	4.7
11341200	CRANE CREEK NEAR LAKEVIEW, OR (Station discontinued)	Lat 42°07'05", long 120°17'25", in NW¼ sec. 7, T.40 S., R.21 E., Lake County, in Fremont National Forest, at culvert on Crane Creek road, 1.5 miles east of crossing of U.S. Highway 395, and 6 miles southeast of Lakeview.	11.4	1966-81	5-18-81	11.27	18
		KLAMATH RIVER BASIN					
11491800	MOSQUITO CREEK NEAR SHEVLIN, OR (Station discontinued)	Lat 43°05'40", long 121°32'50", in SE¼SE¼ sec.32, T.28 S., R.10 E., Klamath County, in Winema National Forest, at culvert on Forest Service road 283A, 150 ft south of intersection with road 283, 2 miles southwest of Jacks Corral, and 8 miles southeast of Shevlin.	2.63	1965-81	5-18-81	7.63	10
11494800	BROWNSWORTH CREEK NEAR BLY, OR (Station discontinued)	Lat 42°25'40", long 120°50'20", in NW¼NW¼ sec.28, T.36 S., R.16 E., Lake County, at culvert on Forest Service road 3610 in Fremont National Forest, 2 miles upstream from Hammond Creek, and about 12 miles east of Bly.	2.20	1965-81	5-18-81	11.09	19
11497800	CURRIER CREEK NEAR PAISLEY, OR	Lat 42°42'55", long 120°52'50", in NW¼NW¼ sec.18, T.33 S., R.16 E., Lake County, in Fremont National Forest, at culvert on Forest Service road 337, 100 ft east of junction with road 3313, 1.4 miles upstream from mouth, and 17 miles west of Paisley.	2.46	1965-81	5-18-81	12.99	45

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Annual maximum Gage height (ft)	Annual maximum Discharge (ft^3/s)
		KLAMATH RIVER BASIN--Continued					
11499495	WEST FORK WHISKEY CREEK NEAR BEATTY, OR	Lat 42°22'32", long 121°22'52", in SW¼ sec.11, T.37 S., R.11 E., Klamath County, at culvert on Road No. 4083 in Winema National Forest, 0.2 mile northwest of State Highway 66, and 7.2 miles southwest of Beatty.	4.40	1980-81	5-18-81	14.95	9.0
11501300	CRYSTAL CREEK NEAR CHILOQUIN, OR (Station discontinued)	Lat 42°33'45", long 121°50'20", in SE¼ sec.2, T.35 S., R.7 E., Klamath County, in Winema National Forest, at culvert on Chiloquin Ridge road, 200 ft upstream from mouth, and 1.5 miles southeast of Chiloquin.	5.77	1965-81	2-19-81	12.72	2.7
11505550	LOST CREEK NEAR ROCKY POINT, OR	Lat 42°29'35", long 122°11'30", in SE¼ sec.26, T.35 S., R.5 E., Klamath County, Winema National Forest, at culvert on Forest Service road 3561, 1.5 miles east of Long Lake, and 5.5 miles west of Rocky Point.	13.2	1966-81	5-18-81	4.05	42
11509400	KLAMATH RIVER TRIBUTARY NEAR KENO, OR (Station discontinued)	Lat 42°07'50", long 121°57'50", in SW¼ sec.35, T.39 S., R.7 E., Klamath County, at culvert on State Highway 66, 0.3 mile upstream from mouth, 1.8 miles west of Keno, and 4.0 miles east of Klamath River bridge.	1.02	1964-81	-	-	0
		OWYHEE RIVER BASIN					
13177805	TENT CREEK NEAR MCDERMITT, NV	Lat 42°02'00", long 117°16'15", in NW¼ sec.12, T.41 S., R.46 E., Malheur County, at culvert on BLM Star Valley access road, 8 miles southwest of Lookout Lake, and 23 miles east of McDermitt.	11.6	1974-76, 1978-81	-	-	0
13182100	DAGO GULCH NEAR ROCKVILLE, OR	Lat 43°17'37", long 117°15'14", in SW¼SE¼ sec.18, T.26 S., R.45 E., Malheur County, at culvert on Bureau of Land Management Lesle Gulch road, 0.2 mile west of Runaway Creek, and 8 miles west of Rockville.	3.09	1970-81	4-20-81	12.61	29
		MALHEUR RIVER BASIN					
13213900	MALHEUR RIVER TRIBUTARY NEAR DREWSEY, OR	Lat 43°46'51", long 118°21'27", in SE¼SW¼ sec.36, T.20 S., R.35 E., Harney County, at culvert on county road to Drewsey, 200 feet north of U.S. Highway 20, and 2 miles south of Drewsey.	2.28	1964-81	2-14-81	9.00	26
13228300	LYTLE CREEK NEAR VALE, OR	Lat 43°57'26", long 117°13'33", in SE¼ sec.32, T.18 S., R.45 E., Malheur County, at culvert on Lytle Boulevard, 2 miles south of Vale.	6.46	1968-81	4-19-81	15.41	497
		POWDER RIVER BASIN					
13286300	WATERSPOUT CREEK NEAR BAKER, OR	Lat 44°50'08", long 117°32'48", in SW¼SW¼ sec.27, T.8 S., R.42 E., Baker County, at culvert on State Highway 86, 14 miles east of Baker.	.96	1968-81	7- 6-81	17.89	165
13289100	IMMIGRANT GULCH NEAR RICHLAND, OR (Station discontinued)	Lat 44°47'10", long 117°08'05", in NW¼ sec.18, T.9 S., R.46 E., Baker County, at culvert on State Highway 86, 1.9 miles northeast of Richland, and 2.0 miles above maximum flow line of Brownlee Reservoir.	6.64	1964-81	2-19-81	7.29	92
		GRANDE RONDE RIVER BASIN					
13329700	TROUT CREEK TRIBUTARY NEAR CHICO, OR	Lat 45°35'50", long 117°15'35", in center of sec.1, T.1 N., R.44 E., Wallowa County, at culvert on State Highway 3, 0.2 mile upstream from mouth, 1.0 mile south of Wallowa-Whitman National Forest boundary and 9.5 miles southwest of Chico.	.26	1967-81	2-18-81	9.71	12
13333050	BUFORD CREEK NEAR FLORA, OR (Station discontinued)	Lat 45°53'25", long 117°17'00", on sec. line 23 and 26, T.5 N., R.44 E., Wallowa County, at two culverts on county road 1.0 mile west of junction with State Highway 3, 1.5 miles southeast of Flora.	.47	1967-81	2-19-81	8.67	9.5

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (ft)	Discharge (ft^3/s)
		WALLA WALLA RIVER BASIN					
14016080	DRY CREEK TRIBUTARY NEAR MILTON-FREEWATER, OR	Lat 45°53'05", long 118°23'28", in NE¼ sec.26, T.5 N., R.35 E., Umatilla County, at culvert on State Highway 11, 2.6 miles south of Milton-Freewater.	1.22	1967-81	3-27-81	25.12	200
		COLD SPRINGS CANYON BASIN					
14019120	NORTH FORK COLD SPRINGS CANYON TRIBUTARY AT HOLDMAN, OR (Station discontinued)	Lat 45°52'40", long 118°55'10", in NW¼NE¼ sec.34, T.5 N., R.31 E., Umatilla County, at culvert on county road, at at mouth, and 0.6 mile east of Holdman.	2.86	1967-81	5-25-81	20.30	3.2
		JOHN DAY RIVER BASIN					
14040900	BRUIN CREEK NEAR DALE, OR	Lat 44°53'51", long 118°47'35", in SW¼ sec.6, T.8 S., R.33 E., Grant County, at culvert on Forest Service road SA-12, 12 miles southeast of Dale.	4.63	1969-81	4-19-81	11.88	28
14043910	GRANITE CREEK BELOW BARNES CREEK, NEAR DALE, OR	Lat 44°52'33", long 119°01'00", in NW¼ sec.17, T.8 S., R.31 E., Grant County, at culvert on U.S. Highway 395, 1.2 miles downstream from Barnes Creek and 8.5 miles south of Dale.	10.4	1981	2-19-81	37.86	113
14046400	DONNELY CREEK TRIBUTARY NEAR SERVICE CREEK, OR	Lat 44°46'20", long 120°00'10", in SE¼ sec.19, T.9 S., R.23 E., Wheeler County, at two culverts on State Highway 207, 1.8 miles south of Service Creek.	1.85	1964-81	-	-	0
14047470	JUNIPER CANYON TRIBUTARY NEAR MIKKALO, OR	Lat 45°27'51", long 120°11'54", in SW¼ sec.21, T.1 S., R.21 E., Gilliam County, at culvert on Mikkalo Road, 0.1 mile upstream from mouth, and 1.7 miles east of Mikkalo.	1.94	1972-81	-	-	0
14048040	GORDON HOLLOW AT DEMOSS SPRINGS, OR (Station discontinued)	Lat 45°30'40", long 120°40'55", in NW¼ sec.3, T.1 S., R.17 E., Sherman County, at culvert on U.S. Highway 97 at DeMoss Springs.	8.86	1959-81	12-26-80	8.28	45
		DESCHUTES RIVER BASIN					
14078200	LIZARD GULCH NEAR HAMPTON, OR	Lat 43°35'20", long 119°59'00", in SW¼ sec.8, T.23 S., R.23 E., Lake County, in Glass Mountain conservation area, at culvert on U.S. Highway 20, and 15.5 miles east of Hampton.	19.6	1965-81	3-25-81	7.31	3.1
14078300	CEMETERY CREEK NEAR PAULINA, OR (Station discontinued)	Lat 44°06'36", long 120°10'39", in SW¼ sec.11, T.17 S., R.21 E., Crook County, at culvert on State Highway 380, 10 miles west of Paulina.	a5.1	1968-81	-	-	0
14082400	WILDCAT CREEK NEAR PRINEVILLE, OR (Station discontinued)	Lat 44°24'47", long 120°30'00", in NW¼ sec.30, T.13 S., R.19 E., Crook County, at culvert on U.S. Highway 26, 18.5 miles northeast of Prineville.	3.66	1968-81	6- 7-81	11.40	32
14095200	SAGEBRUSH CREEK TRIBUTARY NEAR GATEWAY, OR	Lat 44°45'33", long 121°02'02", in SE¼NE¼ sec.27, T.9 S., R.14 E., Jefferson County, at culvert on former U.S. Highway 97, 1 mile upstream from mouth and 11 miles north of Madras.	10.7	1957-81	9-26-81	10.50	3.0
		FIFTEENMILE CREEK BASIN					
14104100	RAMSEY CREEK NEAR DUFUR, OR	Lat 45°24'03", long 121°22'27", in NW¼ sec.13, T.2 S., R.11 E., Wasco County, in Mt. Hood National Forest, at culvert on Forest Service road S207, 12 miles west of Dufur.	3.87	1965-81	12-25-80	13.72	170

a Approximately.
b Maximum observed.

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table.

Discharge measurements at miscellaneous sites during water year 1981

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
Part 11		KLAMATH RIVER BASIN				
Munson Creek	Annie Creek	Lat 42°52'45", long 122°08'15".	-	1967-68, 1977-80	10- 9-80 6- 2-81 7-28-81	4.10 13.4 6.10
Annie Creek	Wood River	Lat 42°46'00", long 122°03'20".	-	1967-68, 1977-80	10-23-80	50.9
Part 14		DESCHUTES RIVER BASIN				
Fall Creek	Sparks Lake	Near center sec.11, T.18 S., R.8 E.	9.56	-	7-24-81	38.1
Goose Creek	.....do.....	NW¼ sec.11, T.18 S., R.8 E.	2.89	-	7-24-81	9.80
Deschutes River	Columbia River	SE¼SE¼ sec.20, T.21 S., R.8 E., just below Sheep Springs, 15 mi northwest of La Pine.	-	1938-49‡, 1950, 1952-57, 1960-80	10-17-80 12-11-80 1-19-81 2-27-81 3-31-81 4-28-81 6-10-81 7-13-81 8-20-81	a392 a307 a355 a305 a260 a408 a497 a529 a559
West Fork Park Creek	Park Creek	SW¼SW¼ sec.6, T.17 S., R.9 E.	2.14	-	7-21-81	1.70
South Fork Squaw Creek	Squaw Creek	NW¼SW¼ sec.31, T.16 S., R.9 E.	5.36	-	7-21-81	34.7
North Fork Squaw Creek	.....do.....	NW¼NW¼ sec.31, T.16 S., R.9 E.	2.27	-	7-21-81	10.0
Soap Creek	North Fork Squaw Creek	Lat 44°09'47", long 121°42'27".	2.95	-	7-21-81	4.53
Pole Creek Spring	Pole Creek	SW¼ sec.18, T.16 S., R.9 E.	-	-	7-20-81	.06
Alder Creek	Trout Creek	Lat 44°13'25", long 121°42'54".	2.4	-	7-20-81	.38
Faith Spring	White River	Near center sec.32, T.4 S., R.10 E.	-	-	5-29-81	.12
Part 14		HOOD RIVER BASIN				
East Fork Hood River	Hood River	NW¼NW¼ sec.18, T.1 N., R.10 E.	108	1917‡	8-26-81	35.8
Clear Branch	Middle Fork Hood River	NE¼NE¼ sec.28, T.1 S., R.9 E.	-	-	8-26-81	13.0
Unnamed Spring	Coe Branch	NW¼NE¼ sec.34, T.1 S., R.9 E.	-	-	5-27-81	.02
Middle Fork Hood River	East Fork Hood River	NW¼NW¼ sec.18, T.1 N., R.10 E.	-	-	8-26-81	112
Stone Spring	Lake Branch	NW¼SE¼ sec.30, T.1 N., R.9 E.	-	-	8-21-80	7.7

‡ Operated as a continuous record gaging station.
a Base flow from intervening springs can be obtained by subtracting flow of Deschutes River below Crane Prairie Reservoir.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

DESCHUTES RIVER BASIN

440149121441400 - FALL CREEK AT SPARKS LAKE, OR (LAT 44 01 49 LONG 121 44 14)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
JUL 24...	0920	38	22	6.5	4	1.2	.4	2.1	.7	11	<1.0

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL 24...	<.1	<.1	.09	.14	.23	.010	.010	19	18	<10	<1

440158121443000 - GOOSE CREEK AT SPARKS LAKE, OR (LAT 44 01 58 LONG 121 44 30)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
JUL 24...	1020	9.8	26	4.0	6	1.7	.5	2.4	.9	11	5.0

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL 24...	6.3	<.1	.09	.21	.30	.030	.020	25	49	<10	1

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

DESCHUTES RIVER BASIN

440158121454000 - DEVILS LAKE NEAR BEND, OR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)
JUL 13...	1130	5.00	26	7.5	11.5	9.5	5	1.0	.7	2.6	.9	12

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	PHENOLS (UG/L)
JUL 13...	2.0	.2	.1	<.10	.37	.48	.070	27	125	20	5	1

440504121435800 - MIDDLE GREEN LAKE, OR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)
JUL 14...	1500	10.0	14	7.6	12.0	9.0	4	1.0	.3	1.8	.4	5.0
14...	1515	66.0	14	7.2	7.0	9.9	5	1.5	.3	1.7	.3	6.0

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	SILICA, DISSOLVED (MG/L AS SIO2)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	PHENOLS (UG/L)
JUL 14...	<1.0	<.1	<.1	<.10	.48	.49	.130	15	30	4	3
14...	<1.0	<.1	<.1	<.10	.50	.50	.010	14	30	4	6

440222121454200 - DEVILS LAKE SPRING NR BEND, OR (LAT 44 02 22 LONG 121 45 42)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)
JUL 24...	1120	.12	35	6.8	3.5	7	1.7	.7	2.9	1.2	10	<1.0

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 24...	.1	<.1	.09	.38	.47	.050	.040	33	47	13	<1

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

DESCHUTES RIVER BASIN

440732121422000 - WEST FORK PARK CREEK AT TRAIL 96C, OR (LAT 44 07 32 LONG 121 42 20)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
JUL 21...	1100	1.7	19	7.5	4	1.2	.3	1.7	.8	7.0	<1.0

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL 21...	<.1	<.1	.09	.37	.46	.010	.010	20	37	57	3

440842121422100 - SOUTH FORK FALLS CREEK AT TRAIL 96C, OR (LAT 44 08 42 LONG 121 42 21)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
JUL 21...	1345	35	12	9.0	4	.9	.5	2.5	.7	10	<1.0

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL 21...	.1	<.1	.09	.35	.44	.040	.040	19	31	16	<1

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

DESCHUTES RIVER BASIN

440908121421700 - NORTH FORK SQUAW CREEK AT TRAIL 96C, OR (LAT 44 09 08 LONG 121 42 17)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
JUL 21...	1505	10	9	17.5	4	1.5	.2	1.0	.4	7.0	1.0

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL 21...	2.6	<.1	.09	.43	.52	.020	.020	8.7	20	18	2

440947121422700 - SOAP CREEK AT TRAIL 96C, NEAR SISTERS OR (LAT 44 09 47 LONG 121 42 27)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
JUL 21...	1615	4.5	22	14.5	10	3.0	.6	1.4	.5	8.0	<1.0

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL 21...	<.1	<.1	.09	.79	.88	.030	.050	14	384	32	2

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

DESCHUTES RIVER BASIN

441111121415200 - POLE CREEK SPRINGS NR SISTERS, OR (LAT 44 11 11 LONG 121 41 52)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
JUL 20...	1615	.06	81	7.5	4.0	24	6.5	2.0	4.3	.9	40	<1.0

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL 20...	2.5	<.1	.09	.39	.48	.060	.050	32	24	<10	<1

441137122025400 - BELKNAP SPRINGS NEAR MCKENZIE BRIDGE OR (LAT 44 11 37 LONG 122 02 54)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
SEP 18...	1255	.10	4200	7.9	69.5	580	230	.3	670	16	20	35

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP 18...	1400	1.1	<.10	.79	.80	.020	.030	85	2450	30	10

441325121425400 - ALDER CREEK AT TRAIL 95 NR SISTERS, OR (LAT 44 13 25 LONG 121 42 54)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
JUL 20...	1430	.38	12	7.4	13.5	5	1.4	.3	1.0	.4	6.0	<1.0

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL 20...	.2	<.1	.09	.37	.46	<.010	.010	11	27	<10	<1

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

DESCHUTES RIVER BASIN

451042121342100 - FAITH SPRING (LAT 45 10 42 LONG 121 34 21)

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
AUG 28...	1200	85	9.0	32	7.4	3.4	3.5	1.2	.5	1.2	.1

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, TOTAL (MG/L AS P)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
AUG 28...	<.10	<.010	.10	<.010	.11	<.01	.030	33	72	75

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT 22...	1400	80	7.9	5.7

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

DESCHUTES RIVER BASIN

451811121333100 - BADGER LAKE, OR

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
AUG									
06...	1330	13.0	27	7.2	16.7	11	3.5	.6	1.9
06...	1345	28.0	27	7.1	11.7	10	2.8	.7	1.7

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)
AUG									
06...	.8	3.2	.5	.1	<.10	.060	.45	.55	.020
06...	.8	3.3	.4	.1	<.10	<.010	.39	.48	.020

DATE	PHOSPHORUS, TOTAL (MG/L AS P)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	STRONTIUM, DISSOLVED (UG/L AS SR)	ZINC, DISSOLVED (UG/L AS ZN)
AUG									
06...	.020	15	43	32	10	30	<1	20	10
06...	.020	15	33	30	9	30	<1	20	4

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT										
22...	1115	13.0	29	6.7	6.5	11.5	11	3.0	.8	2.0

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)
OCT										
22...	1.1	16	.5	.7	<.1	<.10	.020	.39	.58	.010

DATE	PHOSPHORUS, TOTAL (MG/L AS P)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	STRONTIUM, DISSOLVED (UG/L AS SR)	ZINC, DISSOLVED (UG/L AS ZN)
OCT									
22...	.020	16	33	34	8	60	6	20	20

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

DESCHUTES RIVER BASIN

452210121415500 - POND AT DEVILS KITCHEN ON MT. HOOD, OR (LAT 45 22 10 LONG 121 41 55)

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)
OCT 21...	1200	76	4.0	--	5	1.5	.3	.8	.3	.00	67
SEP 17...	1545	125	4.1	1.0	26	7.5	1.7	2.2	.2	.00	43

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	STRONTIUM, DISSOLVED (UG/L AS SR)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 21...	.9	.1	--	2.1	23	75	--	--	--	--	--
SEP 17...	2.2	.1	<.10	11	--	70	<1	1600	78	10	8

ANALYSES OF WETFALL SAMPLES COLLECTED AT ATMOSPHERIC DEPOSITION SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

441730121301500 - PRECIPITATION AT SISTERS-KALLIO

DATE	PRECIP-ITATION DAILY (IN)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT									
10-11	.26	--	--	6	1.0	.760	.2	6.5	2.3
26-26	.24	9	4.7	--	.30	<.040	<.2	.36	.87
NOV									
06-07	.74	4	5.0	--	.04	<.004	<.2	<.05	.05
07-08	.20	4	5.7	<1	.07	.043	<.2	--	--
DEC									
01-02	.89	4	5.3	43	11	3.7	5.7	<.05	1.0
02-03	.14	7	5.7	<1	.08	<.040	<.2	1.0	<.01
JAN									
26-27	.53	2	5.2	--	.20	<.040	<.2	.03	.07
27-28	.24	5	5.4	--	.03	<.004	<.2	9.0	.18
FEB									
13-14	.09	6	6.2	1	.10	.140	.3	.09	.05
15-16	.48	5	5.3	--	.06	<.004	.4	.09	.25
18-19	.25	3	5.9	--	.02	<.004	.4	.12	.13
19-20	.22	5	5.5	1	.06	.086	.3	.11	.39
MAR									
18-18	.51	9	4.8	<1	.05	.065	<.2	.24	.19
MAY									
15-16	.15	--	--	--	.30	<.004	.3	.21	.44
17-18	.61	7	4.8	<1	.06	.070	<.2	.11	.43
23-24	.16	--	--	1	.30	.060	.5	--	--
JUN									
07-08	.63	5	4.9	<1	.03	.060	.3	.20	.18
JUL									
04-05	.16	--	--	3	1.0	.084	.8	2.9	.71

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	BROMIDE DIS-SOLVED (MG/L AS BR)	CADMIUM DIS-SOLVED (UG/L AS CD)	COBALT, DIS-SOLVED (UG/L AS CO)
OCT									
10-11	.18	.18	<.010	.08	<2	<1	<.05	<1	<3
26-26	.27	.14	<.100	.11	2	<1	<.05	<1	<3
NOV									
06-07	.02	<.01	<.100	.02	<2	<1	<.05	<1	<3
07-08	--	--	--	.04	<2	<1	--	1	<3
DEC									
01-02	<.01	<.01	<.010	15	10	<1	<.05	1	<3
02-03	<.01	<.01	<.010	.01	<2	<1	<.05	<1	<3
JAN									
26-27	.01	<.01	<.100	<.01	<2	<1	<.05	<1	<3
27-28	.05	.05	<.100	<.01	<2	<1	<.05	<1	<3
FEB									
13-14	.04	.06	<.100	.05	<2	<1	<.05	<1	<3
15-16	.02	.04	<.100	<.01	<2	<1	<.05	<1	<3
18-19	.02	.01	<.100	.23	<2	<1	<.05	<1	<3
19-20	.02	.04	<.100	.13	<2	<1	<.05	<1	<3
MAR									
18-18	.03	.15	<.100	.01	<2	<1	<.05	<1	<3
MAY									
15-16	.22	.02	<.100	.35	<2	<1	<.05	<1	<3
17-18	.10	.01	<.100	<.01	<2	<1	<.05	<1	<3
23-24	--	--	--	.23	30	<1	--	<1	<3
JUN									
07-08	.09	<.01	<.100	.07	20	<1	<.05	<1	<3
JUL									
04-05	.21	.69	<.100	.20	60	<1	<.05	<1	<3

ANALYSES OF WETFALL SAMPLES COLLECTED AT ATMOSPHERIC DEPOSITION SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

441730121301500 - PRECIPITATION AT SISTERS-KALLIO--Continued

DATE	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LITHIUM DIS-SOLVED (UG/L AS LI)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT									
10-11	10	13	<4	<10	5	<10	7	<6.0	21
26-26	<10	<10	<4	<10	2	<10	1	<6.0	11
NOV									
06-07	<10	<10	<4	<10	<1	<10	<1	<6.0	<3
07-08	<10	<10	<4	<10	<1	<10	<1	<6.0	7
DEC									
01-02	<10	37	<4	23	19	<10	51	<6.0	5
02-03	<10	<10	<4	<10	<1	<10	<1	<6.0	18
JAN									
26-27	<10	<10	<4	<10	1	<10	1	<6.0	4
27-28	<10	<10	<4	<10	<1	<10	<1	<6.0	<3
FEB									
13-14	<10	<10	<4	<10	<1	<10	<1	<6.0	10
15-16	<10	<10	<4	<10	<1	<10	<1	<6.0	<3
18-19	<10	<10	<4	<10	<1	<10	<1	<6.0	<3
19-20	<10	<10	<4	<10	<1	<10	1	<6.0	4
MAR									
18-18	<10	<10	<4	<10	<1	<10	<1	<6.0	5
MAY									
15-16	<10	<10	<4	<10	<1	<10	<1	<6.0	<3
17-18	<10	<10	<4	14	<1	<10	<1	<6.0	4
23-24	<10	<10	<4	<10	1	<10	1	<6.0	17
JUN									
07-08	<10	<10	7	<10	2	<10	<1	<6.0	11
JUL									
04-05	<10	15	5	<10	13	<10	5	<6.0	22

ANALYSES OF WETFALL SAMPLES COLLECTED AT ATMOSPHERIC DEPOSITION SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

441614121271100 - SISTERS GENE COCHRAN

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	BROMIDE DIS-SOLVED (MG/L AS BR)
SEP 22-29	.10	<.004	<.2	.56	.97	.25	.18	<.100	.08	<2	<1	.30

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LITHIUM DIS-SOLVED (UG/L AS LI)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
SEP 22-29	2	<3	<10	<10	<4	<10	<1	<10	<1	<6.0	4

441109119405000 - FOSSIL BENJAMIN LADD

DATE	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SILICA, DIS-SOLVED (MG/L AS SIO2)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	COBALT, DIS-SOLVED (UG/L AS CO)
SEP 22-29	9	6.5	.30	<.004	1.5	.50	<2	<1	<1	<3

DATE	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LITHIUM DIS-SOLVED (UG/L AS LI)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
SEP 22-29	<10	22	<4	<10	2	<10	1	<6.0	<3

ANALYSES OF WETFALL SAMPLES COLLECTED AT ATMOSPHERIC DEPOSITION SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

452017118515700 - PRECIPITATION AT LAGRANDE-EICKER

DATE	PRECIP-ITATION DAILY (IN)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
NOV									
06-06	.32	4	5.0	.05	<.004	<.2	.60	.21	.03
06-07	.24	3	5.2	.06	<.004	<.2	<.05	.04	.04

DATE	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	BROMIDE DIS-SOLVED (MG/L AS BR)	CADMIUM DIS-SOLVED (UG/L AS CD)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)
NOV									
06-06	.04	<.100	.02	3	<1	<.05	2	<3	<10
06-07	<.01	<.100	.02	<2	<1	<.05	<1	<3	<10

DATE	IRON, DIS-SOLVED (UG/L AS FE)	LITHIUM DIS-SOLVED (UG/L AS LI)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV								
06-06	<10	<4	<10	2	<10	<1	<6.0	4
06-07	<10	<4	<10	1	<10	<1	<6.0	<3

454047118445600 - PRECIPETATION AT PENDLETON-MARSHALL

DATE	PRECIP-ITATION DAILY (IN)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT									
14-15	.69	16	--	<1	.20	.092	.3	.93	.35
NOV									
06-07	.45	8	5.2	--	.30	<.004	<.2	.57	.18
07-09	.27	5	5.3	--	.20	<.004	<.2	.25	.10

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	BROMIDE DIS-SOLVED (MG/L AS BR)	CADMIUM DIS-SOLVED (UG/L AS CD)	COBALT, DIS-SOLVED (UG/L AS CO)
OCT									
14-15	.04	.18	<.100	.02	<2	<1	<.05	<1	<3
NOV									
06-07	.04	.12	<.100	.06	<2	<1	<.05	<1	<3
07-09	.04	<.01	<.100	.05	<2	<1	<.05	<1	<3

DATE	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LITHIUM DIS-SOLVED (UG/L AS LI)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT									
14-15	<10	<10	<4	<10	<1	<10	<1	<6.0	4
NOV									
06-07	<10	<10	<4	<10	5	<10	1	<6.0	11
07-09	<10	<10	<4	<10	3	<10	<1	<6.0	10

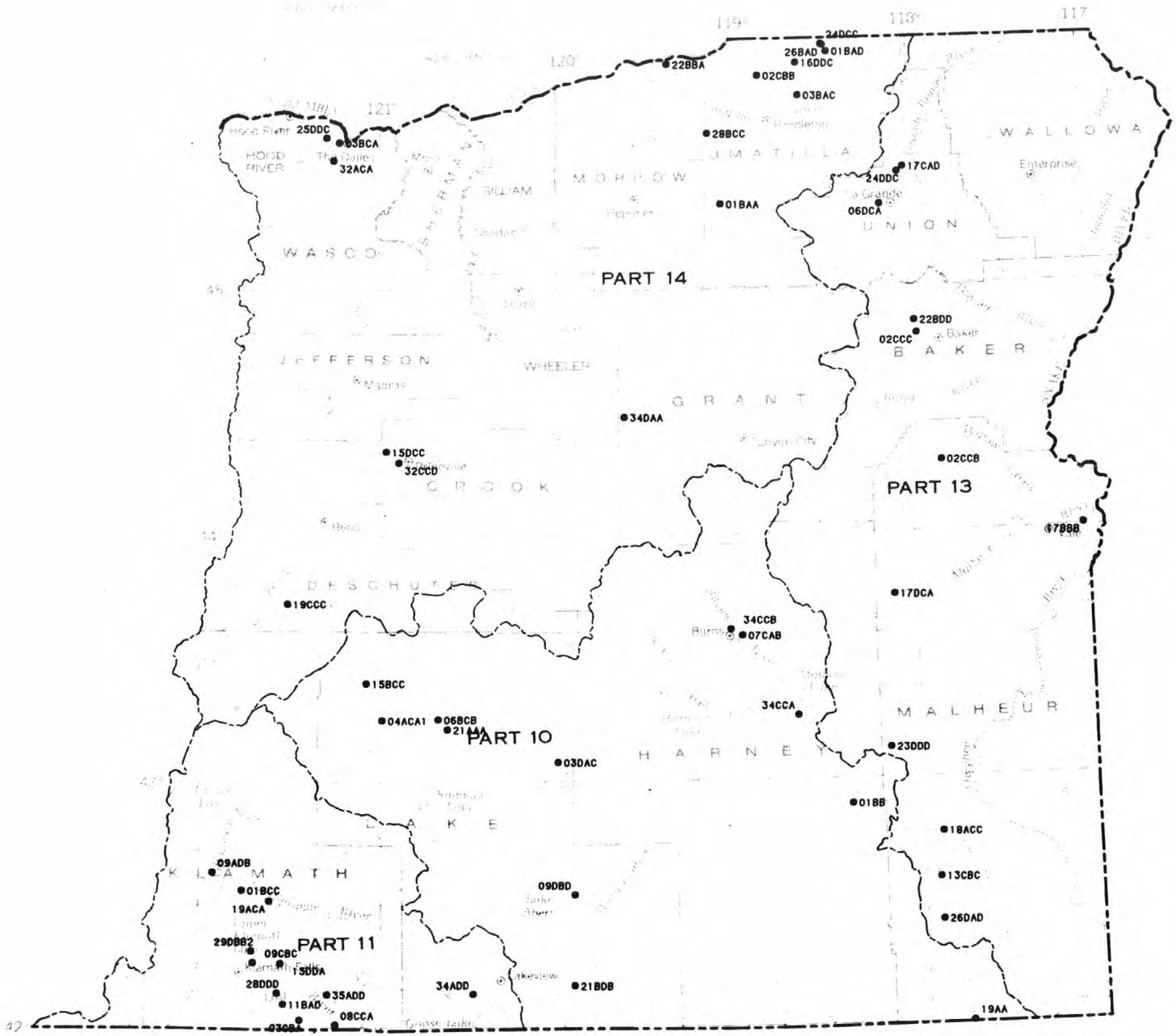


Figure 5. -- Map of Eastern Oregon showing location of observation wells

BAKER COUNTY

445116117551601. Local number 8S/39E-22BDD.
LOCATION.--Lat 44°51'16", long 117°55'16", Hydrologic Unit 17050203.
Owner: Baker County
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Dug observation well, size 18x18 in (460 x 460 mm), depth 11 ft (3.4 m) cribbed with wood to 9 ft (2.7 m), perforated 12-in (300 mm) steel casing 7-11 ft (2-3 m).
DATUM.--Land surface datum is 3,385.78 ft (1,031.99 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of 1¼-in (30 mm) pipe, 0.50 ft (0.15 m) above datum.
PERIOD OF RECORD.--1936, 1938 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.52 ft (0.46 m) below datum, Feb. 22, 1973; lowest measured, 9.87 ft (3.01 m) below datum, Sept. 29, 1939.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 5	3.96	FEB 6	2.55	MAY 12	3.53	AUG 7	4.70

444813117543401. Local number 9S/39E-2CCC.
LOCATION.--Lat 44°48'13", long 117°54'34", Hydrologic Unit 17050203.
Owner: Warren Spencer. Formerly Kermit Hansen.
AQUIFER.--Sand and gravel.
WELL CHARACTERISTICS.--Drilled unused well, diam 12 in (300 mm), depth 321 ft (98 m) perforated 0-321 ft (0-98 m).
DATUM.--Altitude of land surface datum is about 3,410 ft (1,039 m). Measuring point: Top of casing, 0.30 ft (0.09 m) above datum.
PERIOD OF RECORD.--1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.37 ft (0.42 m) below datum, Feb. 17, 1965; lowest measured, 13.95 ft (4.25 m) below datum, Jan. 20, 1955.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 5	10.76	FEB 6	10.69	MAY 12	5.68	AUG 7	9.21

CROOK COUNTY

442100120541701. Local number 14S/15E-15DCC.
LOCATION.--Lat 44°12'00", long 120°54'48", Hydrologic Unit 17070305.
Owner: Evert Hibbitts. Formerly Williams.
AQUIFER.--Sand and gravel.
WELL CHARACTERISTICS.--Drilled domestic and stock well, diam 4 in (100 mm), depth 210 ft (64 m).
DATUM.--Land surface datum is 2,846.8 ft (867.7 m) National Geodetic Vertical Datum of 1929. Measuring point: Center of pressure gage, 6.50 ft (1.98 m) above datum.
REMARKS.--No measurements in 1980.
PERIOD OF RECORD.--1944 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 75.5 ft (23.0 m) above datum, Mar. 12, 1964; lowest measured, 34.5 ft (10.5 m) above datum, May 13, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 16	42.7	-	-	-	-	-	-

DESCHUTES COUNTY

434400121275001. Local number 21S/11E-19CCC.
LOCATION.--Lat 43°44'01", long 121°27'57", Hydrologic Unit 17070302.
Owner: Randy Kellems. Formerly Inez Kellems.
AQUIFER.--Sand and gravel.
WELL CHARACTERISTICS.--Dug domestic and stock well, diam 6 in (150 mm), depth 100 ft (30 m), cased to 70 ft (21 m).
DATUM.--Altitude of land surface datum is about 4,220 ft (1,286 m). Measuring point: Top of casing, 0.20 ft (0.06 m) above datum.
PERIOD OF RECORD.--1945, 1948 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.90 ft (3.32 m) below datum, Aug. 14, 1956; lowest measured, 41.63 ft (12.69 m) below datum Oct. 23, 1964.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

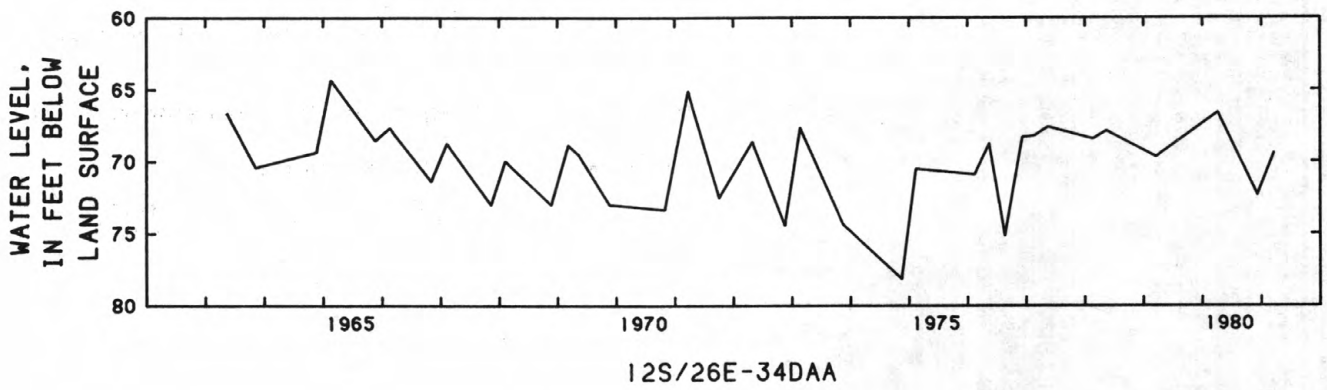
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	22.86	MAR 15	26.87	-	-	-	-

GRANT COUNTY

442845119343001. Local number 12S/26E-34DAA.
LOCATION.--Lat 44°28'59", long 119°34'25", Hydrologic Unit 17070201.
Owner: Dayville Cemetery.
AQUIFER.--Tuffaceous sand and gravel.
WELL CHARACTERISTICS.--Drilled irrigation well, diam 6 in (150 mm), depth 477 ft (145 m), cased to 222 ft (68 m), perforated 177-222 ft (54-68 m).
DATUM.--Altitude of land surface datum is about 2,340 ft (713 m). Measuring point: Top hole in casing seal 1.50 ft (0.5 m) below datum.
PERIOD OF RECORD.--1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 64.33 ft (19.61 m) below datum, Feb. 19, 1965; lowest measured, 78.14 ft (23.82 m) below datum, Nov. 15, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	72.32	DEC 5	72.32	MAR 16	69.45	-	-

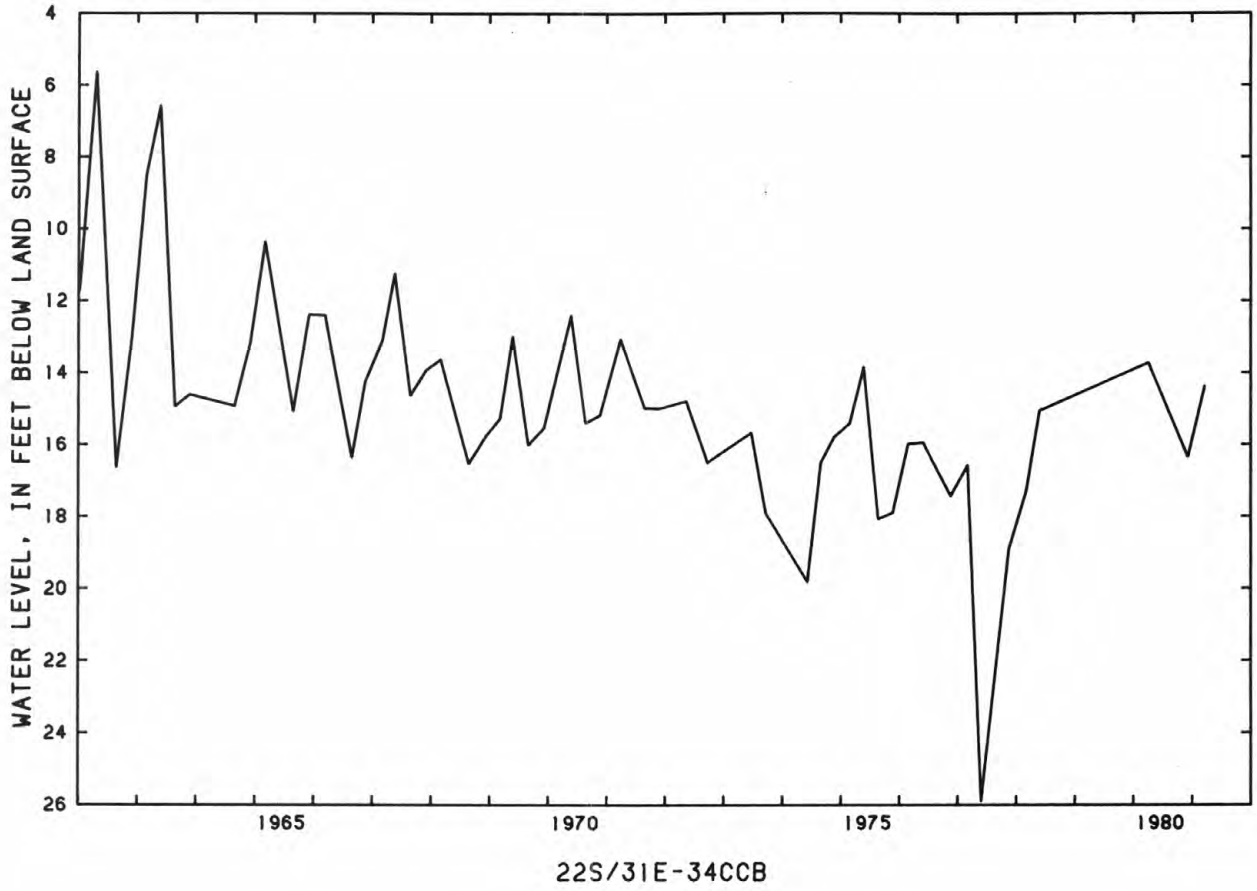


HARNEY COUNTY

433701118595401. Local number 22S/31E-34CCB.
LOCATION.--Lat 43°37'01", long 118°59'54", Hydrologic Unit 17120001.
Owner: Jay Hoyt.
AQUIFER.--Volcanic or sedimentary rock.
WELL CHARACTERISTICS.--Drilled stock well, diam 18 to 8 in (460 to 200 mm), depth 288 ft (88 m), cased to 58 ft (21 m).
DATUM.--Land surface datum is 4,153.17 ft (1,265.89 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of well cover, 1.00 ft (0.30 m) above datum.
PERIOD OF RECORD.--1936 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.50 ft (0.46 m) below datum, Apr. 21, 1936; lowest measured, 19.82 ft (6.04 m) below datum, June 6, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 4	16.35	MAR 17	14.38	-	-	-	-



433527118560502. Local number 23S/32E-7CAB.
LOCATION.--Lat 43°35'27", long 118°56'05", Hydrologic Unit 17120001.
Owner: Emmett Ray. Formerly Dorland Ray.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled irrigation well, diam 18 in (460 mm), depth 93 ft (28 m), cased to 60 ft (18 m).
DATUM.--Land surface datum is 4,135.24 ft (1,260.42 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.36 ft (0.11 m) below datum.
PERIOD OF RECORD.--1928 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.07 ft (0.63 m) below datum, May 19, 1965; lowest measured, 38.37 ft (11.70 m) below datum, July 30, 1931.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 4	8.66	-	-	-	-	-	-

HARNEY COUNTY--Continued

431551118381001. Local number 26S/33E-34CCA.
LOCATION.--Lat 43°15'51", long 118°38'10", Hydrologic Unit 17120001.
Owner: Davis Farms.
AQUIFER.--Cinders.
WELL CHARACTERISTICS.--Drilled irrigation well, diam 14 in (350 mm), depth 81 ft (25 m), cased to 30 ft (9 m).
DATUM.--Altitude of land surface datum is 4,120 ft (1,256 m). Measuring point: Top of casing, 0.50 ft (0.15 m) above datum.
PERIOD OF RECORD.--1962 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.10 ft (5.82 m) below datum, Mar. 23, 1978; lowest measured, 22.10 ft (6.74 m) below datum, Mar. 9, 1967.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 30	20.75	MAR 23	21.63	SEP 30	(P)	-	-

425400118205001. Local number 31S/35E-1BB.
LOCATION.--Lat 42°54'00", long 118°20'50", Hydrologic Unit 17120009.
Owner: Fred Pallock.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled domestic well, diam 8 in (200 mm), depth 32 ft (10 m).
DATUM.--Altitude of land surface datum is 4,270 ft (1,302 m). Measuring point: Top of casing, 0.50 ft (0.15 m) above datum.
PERIOD OF RECORD.--1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.35 ft (0.72 m) below datum, Aug. 20, 1975; lowest measured, 18.12 ft (5.52 m) below datum, Nov. 20, 1963, May 21, 1964.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 3	6.33	MAR 19	6.20	-	-	-	-

KLAMATH COUNTY

423832121524801. Local number 34S/7E-9ADB.
LOCATION.--Lat 42°38'32", long 121°52'48", Hydrologic Unit 18010201.
Owner: State of Oregon.
AQUIFER.--Basalt.
WELL CHARACTERISTICS.--Drilled domestic well, diam 6 in (150 mm), depth 221 ft (67 m), cased to 43 ft (13 m).
DATUM.--Altitude of land surface datum is 4,220 ft (1,286 m). Measuring point: Bolt above top of casing, 4.86 ft (1.48 m) below datum.
REMARKS.--No measurements in 1980.
PERIOD OF RECORD.--1955 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.49 ft (5.64 m) below datum, Jan. 31, 1975; lowest measured, 26.87 ft (8.19 m) below datum, Apr. 30, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	27.08	-	-	-	-	-	-

KLAMATH COUNTY--Continued

423408121430901. Local number 35S/8E-1BCC.
LOCATION.--Lat 42°34'08", long 121°43'09", Hydrologic Unit 18010202.
Owner: H. G. Wolff.
WELL CHARACTERISTICS.--Drilled domestic well, diam 6 in (150 mm), depth 102 ft (31 m).
DATUM.--Altitude of land surface datum is 4,305 ft (1,312 m). Measuring point: top of casing 0.50 ft (0.15 m) above datum.
REMARKS.--No measurements in 1981.
PERIOD OF RECORD.--1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.45 ft (0.44 m) below datum, Apr. 8, 1956; lowest measured, 17.00 ft (5.18 m) below datum, July 27, 1977.

423133121340801. Local number 35S/10E-19ACA.
LOCATION.--Lat 42°31'31", long 121°34'08", Hydrologic Unit 18010202.
Owner: Wolfe Butte Ranch.
AQUIFER.--Volcanic rock.
WELL CHARACTERISTICS.--Drilled domestic well, diam, 6 in (150 mm), depth 360 ft (110 m), cased to 70 ft (21 m).
DATUM.--Altitude of land surface datum is 4,300 ft (1,311 m). Measuring point: Top of casing, 0.50 ft (0.15 m), above datum.
PERIOD OF RECORD.--1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.98 ft (2.13 m) below datum, Apr. 18, 1956; lowest measured, 40.72 ft (12.41 m) below datum, July 24, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	R/ 29.50	MAR 21	R/ 32.20	-	-	-	-

421920121400001. Local number 37S/10E-29DBB2.
LOCATION.--Lat 42°19'20", long 121°40'00", Hydrologic Unit 18010204.
Owner: Edgewood Ranch.
AQUIFER.--Gravel.
WELL CHARACTERISTICS.--Drilled stock well, diam 18 in (460 mm), depth 800 ft (244 m), cased to 20 ft (6.1 m).
DATUM.--Altitude of land surface datum is 4,186 ft (1,276 m). Measuring point: Top of casing, at datum.
PERIOD OF RECORD.--1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.78 ft (6.33 m) below datum, Apr. 17, 1958; lowest measured, 31.97 ft (9.74 m) below datum, Oct. 20, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	32.52	MAR 22	33.39	-	-	-	-

421630121392701. Local number 38S/10E-9CBC.
LOCATION.--Lat 42°16'30", long 121°39'27", Hydrologic Unit 18010204.
Owner: Underwood Ranch.
AQUIFER.--Basalt.
WELL CHARACTERISTICS.--Drilled stock well, diam 6 in (150 mm), depth 135 ft (41 m), cased to 25 ft (8 m).
DATUM.--Altitude of land surface datum is 4,210 ft (1,283 m). Measuring point: top of casing, 0.70 ft (0.21 m) above datum.
PERIOD OF RECORD.--1949-1972, 1976 to 1981 (destroyed).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 107.55 ft (32.78 m) below datum Apr. 17, 1958; lowest measured, 121.71 ft (37.10 m) below datum, July 28, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	115.56	MAR 22	112.18	-	-	-	-

KLAMATH COUNTY--Continued

421610121303001. Local number 38S/11½E-15DDA.
LOCATION.--Lat 42°16'12", long 121°30'25", Hydrologic Unit 18010204.
Owner: George McCollum.
AQUIFER.--Lava rock and cinders.
WELL CHARCTERISTICS.--Drilled irrigation well, diam 12 in (300 mm), depth 495 ft (151 m).
DATUM.--Altitude of land surface datum is 4,185 ft (1,276 m). Measuring point: Airline hole in pumpbase, 1.05 ft (0.32 m) above datum.
PERIOD OF RECORD.--1948, 1950 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 71.26 ft (21.72 m) below datum, Apr. 24, 1975; lowest measured, 82.20 ft (25.05 m) below datum, Oct. 3, 1979.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	79.90	MAR 22	79.75	-	-	-	-

420908121313701. Local number 39S/11½E-28DDD.
LOCATION.--Lat 42°09'08", long 121°31'37", Hydrologic Unit 18010204.
Owner: Lost River Ranch.
AQUIFER.--Diatomite.
WELL CHARACTERISTICS.--Drilled domestic and stock well, diam 6 in (150 mm), depth 460 ft (140 m), cased to 60 ft (18 m).
DATUM.--Altitude of land surface datum is 4,105 ft (1,251 m). Measuring point: Top south side of concrete curb, 0.30 ft (0.09 m) above datum.
PERIOD OF RECORD.--1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.50 ft (1.98 m) below datum, Aug. 25, 1955; lowest measured, 37.16 ft (11.33 mm) below datum, July 24, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 23	R/ 13.93	-	-	-	-	-	-

420844121150801. Local number 39S/12E-35ADD.
LOCATION.--Lat 42°08'45", long 121°15'06", Hydrologic Unit 18010204.
Owner: Quentin Steele.
AQUIFER.--Basalt.
WELL CHARACTERISTICS.--Drilled domestic and stock well, diam 6 in (150 mm), depth 360 ft (110 m).
DATUM.--Altitude of land surface datum is 4,180 ft (1,274 m). Measuring point: Top of casing at datum.
PERIOD OF RECORD.--1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 33.26 ft (10.14 m) below datum, Aug. 5, 1958; lowest measured, 43.42 ft (13.23 m) below datum, May 2, 1961.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	37.47	MAR 22	R/ 48.30	-	-	-	-

420632121293601. Local number 40S/11E-11BAD.
LOCATION.--Lat 42°06'23", long 121°29'36", Hydrologic Unit 18010204.
Owner: A. W. Shaupp.
AQUIFER.--Basalt.
WELL CHARACTERISTICS.--Drilled irrigation and stock well, diam 12 in (300 mm), depth 992 ft (302 m).
DATUM.--Altitude of land surface datum is 4,150 ft (1,265 m). Measuring point: Top of ¼-in (6 mm) hole in pumpbase flange, 0.60 ft (0.18 m) above datum.
PERIOD OF RECORD.--1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.38 ft (2.55 m) below datum, Apr. 7, 1956; lowest measured, 28.83 ft (8.79 m) below datum, July 22, 1964.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 23	20.23	-	-	-	-	-	-

KLAMATH COUNTY--Continued

420232121241201. Local number 41S/12E-3CBA.
LOCATION.--Lat 42°02'32", long 121°24'12", Hydrologic Unit 18010204.
Owner: Al Prescott.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled domestic well, diam 4 in (100 mm), depth 76 ft (23 m).
DATUM.--Altitude of land surface datum is 4,110 ft (1,253 m). Measuring point: Top of casing, 0.30 ft (0.09 m) above datum.
PERIOD OF RECORD.--1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.75 ft (0.23 m) below datum, Feb. 18, 1955; lowest measured, 4.56 ft (1.39 m) below datum, July 24, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 23	R/ 3.14	-	-	-	-	-	-

420124121122801. Local number 41S/14E-8CCA.
LOCATION.--Lat 42°01'24", long 121°12'28", Hydrologic Unit 18010204.
Owner: Charles Kilgore.
AQUIFER.--Basalt fragments.
WELL CHARACTERISTICS.--Drilled irrigation well, diam 16 to 12 in (410 to 300 mm), depth 210 ft (64 m), cased to 8 ft (2 m).
DATUM.--Altitude of land surface datum is 4,160 ft (1,268 m). Measuring point: Hole in pumpbase, 1.00 ft (0.30 m) above datum.
PERIOD OF RECORD.--1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.84 ft (4.52 m) below datum, Jan. 28, 1965; lowest measured, 21.12 ft (6.44 m) below datum, Apr. 25, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	17.84	MAR 22	18.78	-	-	-	-

LAKE COUNTY

432435121015001. Local number 25S/14E-15BCC.
LOCATION.--Lat 43°24'35", long 121°01'50", Hydrologic Unit 17120005.
Owner: Surcomp. Formerly Al Soto.
AQUIFER.--Basalt.
WELL CHARACTERISTICS.--Drilled unused well, diam 18 in (460 mm), depth 220 ft (67 m).
DATUM.--Altitude of land surface datum is about 4,350 ft (1,326 m). Measuring point: Top of casing, at datum.
PERIOD OF RECORD.--1932, 1935-36, 1938 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 40.88 ft (12.46 m) below datum, Oct 7, 1974; lowest measured, 52.88 ft (16.18 m) below datum, Oct. 22, 1948.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 24	45.45	MAR 5	45.20	-	-	-	-

431536120563901. Local number 27S/15E-4ACA1.
LOCATION.--Lat 43°15'36", long 120°56'39", Hydrologic Unit 17120005.
Owner: M. Y. Parks.
AQUIFER.--Basaltic fragments.
WELL CHARACTERISTICS.--Drilled irrigation well, diam 16 in (410 mm), depth 257 ft (78 m), cased to 14 ft (4 m).
DATUM.--Altitude of land surface datum is about 4,335 ft (1,321 m). Measuring point: Top of pumpbase flange, 2.00 ft (0.61 m) above datum.
PERIOD OF RECORD.--1932, 1935-36, 1938 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 35.30 ft (10.76 m) below datum, May 15, 1975; lowest measured, 39.64 ft (12.08 m) below datum, July 2, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 24	38.50	MAR 5	38.21	-	-	-	-

LAKE COUNTY--Continued

431547120380201. Local number 27S/18E-6BCB.
LOCATION.--Lat 43°15'47", long 120°38'02", Hydrologic Unit 17120005.
Owner: Rose T. Morici.
AQUIFER.--Sand.
WELL CHARACTERISTICS.--Drilled unused well, diam 8 in (200 mm), depth 83 ft (25 m), cased to 10 ft (3 m).
DATUM.--Altitude of land surface datum is about 4,317 ft (1,316 m). Measuring point: Top of casing, 0.50 ft (0.15 m) above datum.
PERIOD OF RECORD.--1940 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.94 ft (4.86 m) below datum, Oct. 8, 1974; lowest measured, 25.19 ft (7.68 m) below datum, Apr. 1, 1953.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	17.11	NOV 25	17.26	MAR 4	17.23	-	-

431320120350001. Local number 27S/18E-21AAA.
LOCATION.--Lat 43°13'20", long 120°35'00", Hydrologic Unit 17120005.
Owner: Chewaucan Land & Cattle Co.
AQUIFER.--Basalt (?).
WELL CHARACTERISTICS.--Drilled abandoned oil-test well, diam 6½ in (165 mm), depth 635 ft (193 m).
DATUM.--Altitude of land surface datum is about 4,330 ft (1,320 m). Measuring point: Top of casing, at datum.
PERIOD OF RECORD.--1955 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.41 ft (8.05 m) below datum, Apr. 5, 1967; lowest measured, 28.78 ft (8.77 m) below datum, July 1, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 4	28.34	-	-	-	-	-	-

430508119582001. Local number 29S/23E-3DAC.
LOCATION.--Lat 43°05'08", long 119°58'20", Hydrologic Unit 17120005.
Owner: U.S. Soil Conservation Service
AQUIFER.--Basalt (?).
WELL CHARACTERISTICS.--Drilled stock well, diam 8 in (200 mm), depth 177 ft (54 m).
DATUM.--Altitude of land surface datum is about 4,225 ft (1,288 m). Measuring point: Top of casing collar, at datum.
PERIOD OF RECORD.--1945, 1947 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.42 ft (4.395 m) below datum, July 27, 1965; lowest measured, 19.62 ft (5.97 m) below datum, Apr. 23, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 20	18.09	-	-	-	-	-	-

423250119531501. Local number 35S/24E-9DBD.
LOCATION.--Lat 42°32'45", long 119°53'22", Hydrologic Unit 17120007.
Owner: U.S. Bureau of Land Management.
AQUIFER.--Basalt.
WELL CHARACTERISTICS.--Drilled well, diam 8 in (200 mm), depth 376 ft (115 m), cased to 22 ft (8 m).
DATUM.--Altitude of land surface datum is 4,470 ft (1,362 m).
REMARKS.--Hogback well on Rabbit Hills SW quadrangle map.
PERIOD OF RECORD.--1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.17 ft (2.19 m) below datum, Feb. 1, 1966; lowest measured, 11.15 ft (3.40 m) below datum, July 31, 1979.

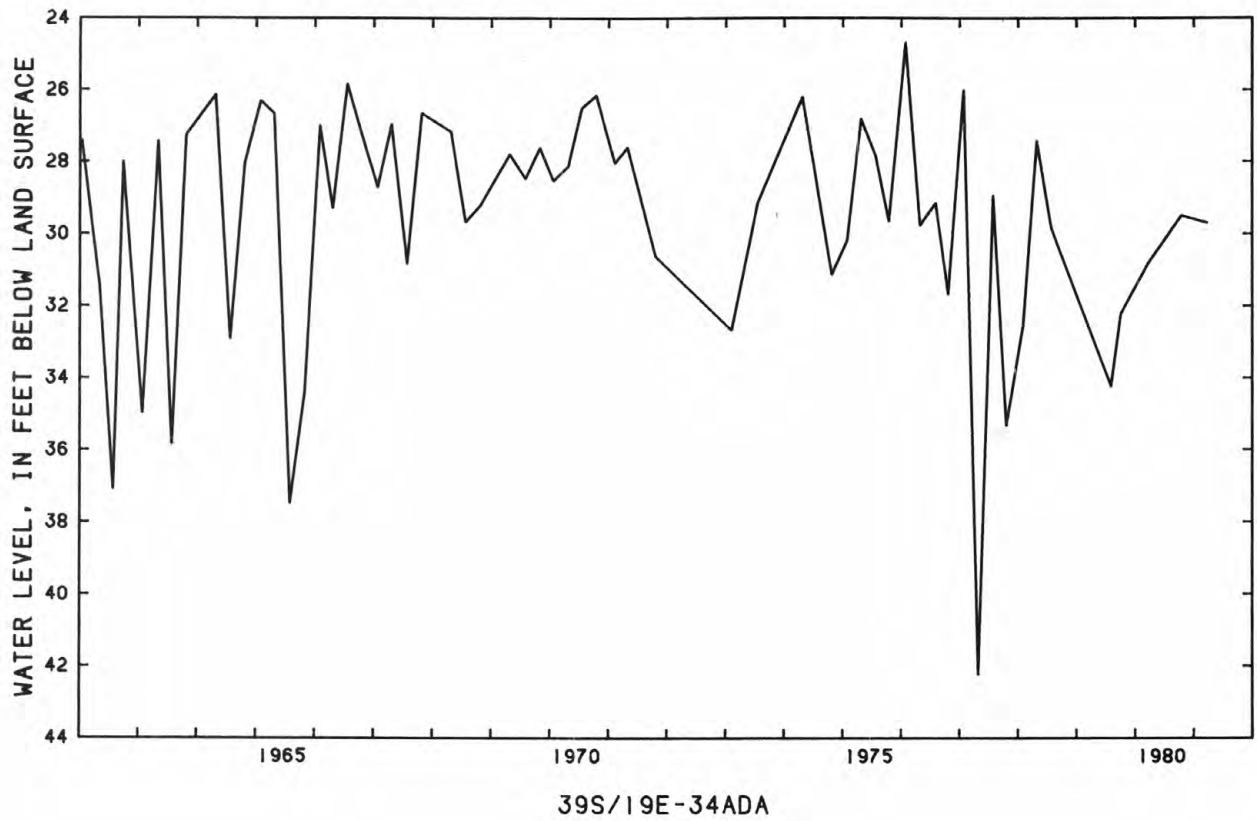
WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 21	8.17	-	-	-	-	-	-

420842120271301. Local number 39S/19E-34ADA.
LOCATION.--Lat 42°08'42", long 120°27'13", Hydrologic Unit 18020001.
Owner: Daryl Jamison.
WELL CHARACTERISTICS.--Drilled domestic and stock well, diam 6 in (150 mm), depth 110 ft (34 m), cased to 110 ft (34 m).
DATUM.--Altitude of land surface datum is 4,792 ft (1,461 m). Measuring point: Top of vent pipe, 2.00 ft (0.61 m) above datum.
PERIOD OF RECORD.--1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 23.78 ft (7.25 m) below datum, Oct. 13, 1960; lowest measured, R/32.21 ft (9.82 m) below datum, Oct. 2, 1979.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	29.50	MAR 21	29.70	-	-	-	-



421032119535802. Local number 39S/24E-21BDB.
LOCATION.--Lat 42°10'34", long 119°53'48", Hydrologic Unit 17120007.
Owner: E.G. & T.M. Sanford
AQUIFER.--Gravel.
WELL CHARACTERISTICS.--Drilled domestic well, diam 6 in (150 mm), depth 165 ft (50 m).
DATUM.--Altitude of land surface datum is about 4,580 ft (1,396 m). Measuring point: Top of casing, 0.50 ft (0.15 m) above datum.
PERIOD OF RECORD.--1948 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.00 ft (2.74 m) below datum, July 23, 1974; lowest measured, 19.34 ft (5.90 m) below datum, Jan. 15, 1960.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	19.11	MAR 21	19.25	-	-	-	-

MALHEUR COUNTY

441710117472301. Local number 15S/40E-2CCB.
LOCATION.--Lat 44°17'11", long 117°47'22", Hydrologic Unit 17050119.
Owner: Rankin Crow.
AQUIFER.--Gravel.
WELL CHARACTERISTICS.--Drilled irrigation well, diam 10 in (250 mm), depth 310 ft (94 m), cased to 170 ft (52 m).
DATUM.--Altitude of land surface datum is about, 3,898.3 ft (1,188.2 m). Measuring point: 1.00 ft (0.30 m) above datum.
PERIOD OF RECORD.--1950 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 31.06 ft (9.47 m) below datum, Mar. 18, 1951; lowest measured, 58.37 ft (17.79 m) below datum, Oct. 24, 1979.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	57.06	MAR 13	54.59	-	-	-	-

440007117000401. Local number 18S/47E-17BBB.
LOCATION.--Lat 44°00'36", long 117°00'13", Hydrologic Unit 17050115.
Owner: Earl Weaver.
WELL CHARACTERISTICS.--Drilled domestic well, diam 3 in (80 mm), depth 135 ft (41 m), cased to 135 ft (41 m).
DATUM.--Altitude of land surface datum is about 2,180 ft (664 m). Measuring point: Top of casing, 0.95 ft (0.29 m) above datum.
PERIOD OF RECORD.--1950 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.91 ft (2.11 m) below datum, Sept. 9, 1952; lowest measured, 15.15 ft (4.62 m) below datum, Aug. 31, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 2	10.45	MAR 18	8.27	-	-	-	-

434450118044001. Local number 21S/38E-17DCA.
LOCATION.--Lat 43°44'50", long 118°04'40", Hydrologic Unit 17050116.
Owner: Walter Bodkin.
AQUIFER.--Gravel.
WELL CHARACTERISTICS.--Dug stock well, diam 12 in (300 mm), depth 14 ft (4.2 m), cribbed to bottom.
DATUM.--Altitude of land surface datum is about 2,960 ft (902 m). Measuring point: At land surface datum.
PERIOD OF RECORD.--1945-56, 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.07 ft (0.94 m) below datum, June 23, 1952; lowest measured, 11.33 ft (3.45 m) below datum, Feb. 28, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 17	9.28	-	-	-	-	-	-

430730118073001. Local number 28S/37E-23DDD.
LOCATION.--Lat 43°07'30", long 118°07'30", Hydrologic Unit 17050110.
Owner: Earl Obenchain.
AQUIFER.--Gravel.
WELL CHARACTERISTICS.--Dug domestic well, diam 4 ft (1.2 m), depth 30 ft (9 m), cribbed with rock to bottom.
DATUM.--Altitude of land surface datum is about 4,060 ft (1,240 m). Measuring point: Top of south side of concrete casing, 1.85 ft (0.56 m) above datum.
PERIOD OF RECORD.--1950 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.95 ft (0.59 m) below datum, Mar 8, 1967; lowest measured, 18.40 ft (5.61 m) below datum, Jan. 22, 1955.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 30	9.15	MAR 23	6.35	SEP 30	9.90	-	-

424639117510501. Local number 32S/40E-18ACC.
LOCATION.--Lat 42°46'38", long 117°51'03", Hydrologic Unit 17050109.
Owner: Clarence J. Eckstein.
AQUIFER.--Volcanic rock.
WELL CHARACTERISTICS.--Drilled domestic and public-supply well, diam 6 in (150 mm), depth 358 ft (109 m), cased to 160 ft (49 m).
DATUM.--Altitude of land surface datum is about 3,930 ft (1,200 m). Measuring point: Hole in top of casing, 0.70 ft (0.21 m) above datum.
PERIOD OF RECORD.--1950 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 234.21 ft (71.39 m) below datum, Mar. 1, 1977; lowest measured, 243.89 ft (74.34 m) below datum, June 4, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 2	234.30	MAR 18	234.70	-	-	-	-

423527117522501. Local number 34S/39E-13CBC.
LOCATION.--Lat 42°35'27", long 117°52'25", Hydrologic Unit 17050109.
Owner: Civil Aeronautics Administration.
AQUIFER.--Basalt (?).
WELL CHARACTERISTICS.--Drilled observation well, diam 10 in (250 mm), depth 246 ft (75 m).
DATUM.--Altitude of land surface datum is 4,050 ft (1,234 m). Meauring point: Top of casing, at datum.
PERIOD OF RECORD.--1954-56, 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 193.53 ft (58.99 m) below datum, Aug. 19, 1975; lowest measured, 207.20 ft (63.15 m) below datum, Sept. 13, 1961.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 2	193.88	MAR 18	194.23	-	-	-	-

422504117515501. Local number 36S/41E-26DAD.
LOCATION.--Lat 42°25'04", long 117°51'55", Hydrologic Unit 17050109.
Owner: U.S. Bureau of Land Management.
AQUIFER.--Basalt (?).
WELL CHARACTERISTICS.--Drilled unused well, diam 8 in (200 mm), depth 222 ft (68 m).
DATUM.--Altitude of land surface datum is 4,200 ft (1,280 m). Measuring point: Top of casing, 1.00 ft (0.30 m) above datum.
PERIOD OF RECORD.--1961 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 194.07 ft (59.15 m) below datum, May 2, 1962; lowest measured, 219.12 ft (66.79 m) below datum, Nov. 16, 1971.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 2	209.04	MAR 18	209.74	-	-	-	-

420010117431001. Local number 41S/43E-19AA.
LOCATION.--Lat 42°00'10", long 117°43'10", Hydrologic Unit 16040201.
Owner: Victor Albisu.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled domestic well, diam 6 in (150 mm), depth 98 ft (30 m).
DATUM.--Altitude of land surface datum is 4,420 ft (1,347 m). Measuring point: Top of casing, 5.35 ft (1.63 m) below datum.
PERIOD OF RECORD.--1955 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.23 ft (3.73 m) below datum, Sept. 19, 1972; lowest measured, 32.11 ft (9.79 m) below datum, Aug. 23, 1966.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 2	14.69	MAR 18	15.57	-	-	-	-

UMATILLA COUNTY

453736119043401. Local number 2N/30E-28BDC.
LOCATION.--Lat 45°37'36", long 119°04'34", Hydrologic Unit 17070103.
Owner: Cunningham Sheep Co.
AQUIFER.--Columbia River Basalt Group.
WELL CHARACTERISTICS.--Drilled unused well, diam 6 in (150 mm), depth 81 ft (25 m).
DATUM.--Altitude of land surface datum is 1,380 ft (439 m). Measuring point: Top of casing, 0.40 ft (0.12 m) above datum.
PERIOD OF RECORD.--1953 to 1980 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 58.93 ft (17.96 m) below datum, May 10, 1978; lowest measured, 68.28 ft (20.81 m) below datum, Sept. 19, 1958.

454639118330901. Local number 3N/34E-3BAC.
LOCATION.--Lat 45°46'25", long 118°33'08", Hydrologic Unit 17070103.
Owner: Berkley Davis.
AQUIFER.--Columbia River Basalt Group.
WELL CHARACTERISTICS.--Drilled irrigation well, diam 12 in (300 mm), depth 1,263 ft (385 m), deepened from 298 ft (91 m) in 1972; cased to 60 ft (18 m).
DATUM.--Altitude of land surface datum is 1,544 ft (471 m). Measuring point: Center of air gage, 1.90 ft (0.58 m) above datum.
REMARKS.--No measurements in 1980.
PERIOD OF RECORD.--1953 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4 ft (1.5 m) below datum, May 2, 1954; lowest measured, 130.5 ft (39.8 m) below datum, Oct. 27, 1970.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 11	131.50	MAR 12	101.72	-	-	-	-

455120118470501. Local number 4N/32E-2CBB.
LOCATION.--Lat 45°51'20", long 118°46'55", Hydrologic Unit 17070103.
Owner: L.F. King
AQUIFER.--Columbia River Basalt Group.
WELL CHARACTERISTICS.--Drilled irrigation well, diam 10 in (250 mm), reported depth 527 ft (161 m).
DATUM.--Altitude of land surface datum is 1,650 ft (503 m). Measuring point: Hole in pumpbase, at datum.
REMARKS.--No measurements in 1980.
PERIOD OF RECORD.--1953 to 1981 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11 ft (3 m) below datum, Aug. 26, 1953; lowest measured, R/ 60.85 ft (18.50 m) below datum, Aug. 25, 1959.

455425119182001. Local number 5N/28E-22BBA.
LOCATION.--Lat 45°54'25", long 119°18'08", Hydrologic Unit 17070101.
Owner: L.J. Martin.
AQUIFER.--Columbia River Basalt Group.
WELL CHARACTERISTICS.--Drilled domestic well, diam 6 in (150 mm), depth 189 ft (58 m), cased to 8 ft (2.4 m).
DATUM.--Altitude of land surface datum is 440 ft (134 m). Measuring point: Top of casing, at datum.
REMARKS.--No measurements in 1980.
PERIOD OF RECORD.--1953 to 1981 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.39 ft (1.34 m) below datum, Feb. 15, 1965; lowest measured, 53.62 ft (16.34 m) below datum, Nov. 30, 1978.

455420118334001. Local number 5N/34E-16DDC.
LOCATION.--Lat 45°54'18", long 118°33'40", Hydrologic Unit 17070102.
Owner: R.M. Thompson.
AQUIFER.--Basalt.
WELL CHARACTERISTICS.--Drilled domestic and stock well, diam 6 in (150 mm), depth 228 ft (69 m).
DATUM.--Altitude of land surface datum is 2,130 ft (649 m). Measuring point: Top of hole in sanitary seal, 0.50 ft (0.15 m) above datum.
REMARKS.--No measurements in 1980.
PERIOD OF RECORD.--1953 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 139.82 ft (42.62 m) below datum, Dec. 1, 1978; lowest measured, R/162.50 ft (49.53 m) below datum, Nov. 30, 1956.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 11	138.64	-	-	-	-	-	-

UMATILLA COUNTY--Continued

455652118230001. Local number 5N/35E-1BAD.
LOCATION.--Lat 45°56'52", long 118°23'00", Hydrologic Unit 17070102.
Owner: W. Bingman.
AQUIFER.--Gravel.
WELL CHARACTERISTICS.--Dug irrigation well, size 6 x 8 ft (1.8 x 2.4 m), depth 37 ft (11 m), curbed with wood.
DATUM.--Land surface datum is 995.60 ft (303.46 m) National Geodetic Vertical Datum of 1929. Measuring point: At datum.
PERIOD OF RECORD.--1933 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.22 ft (4.03 m) below datum, Dec. 19, 1946; lowest measured, 35.43 ft (10.80 m) below datum, Feb. 16, 1937.

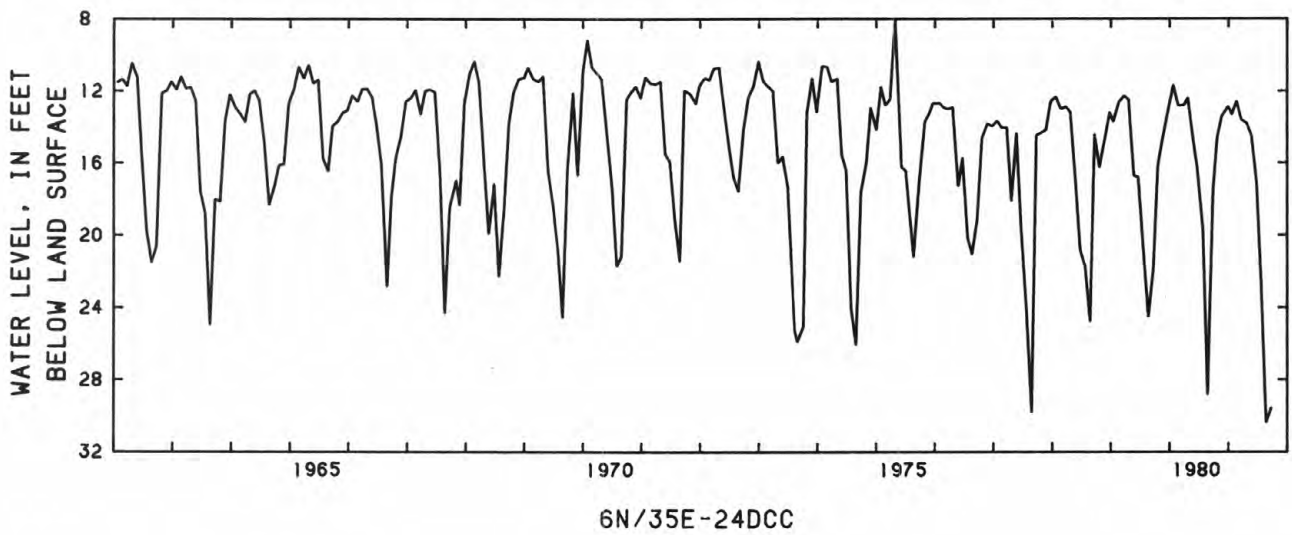
WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	24.2	JAN 19	22.75	APR 21	21.8	JUL 20	30.4
NOV 17	23.7	FEB 18	21.2	MAY 20	25.0	AUG 20	30.6
DEC 26	21.6	MAR 18	21.9	JUN 22	23.10	SEP 21	dry

455840118244501. Local number 6N/35E-24DCC.
LOCATION.--Lat 45°58'40", long 118°24'45", Hydrologic Unit 17070102.
Owner: G. Ransom.
AQUIFER.--Gravel.
WELL CHARACTERISTICS.--Dug and drilled irrigation well, size 6 x 6 ft (1.8 x 1.8 m) to 10-in (250 mm) diam, depth 165 ft (50 m), cased to 45 ft (14 m).
DATUM.--Land surface datum is 864.30 ft (263.44 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of 4- x 6-in (100 x 150 mm) plank on east side of well curb, 0.50 ft (0.15 m) above datum.
PERIOD OF RECORD.--1933 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.65 ft (2.33 m) below datum, July 29, 1948; lowest measured, 28.8 ft (8.78 m) below datum, Aug. 21, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	14.6	JAN 19	13.3	APR 21	13.8	JUL 20	22.70
NOV 17	13.4	FEB 18	12.6	MAY 20	14.48	AUG 20	30.35
DEC 26	12.9	MAR 18	13.6	JUN 22	17.10	SEP 21	29.60



455830118241502. Local number 6N/35E-26BAD.
LOCATION.--Lat 45°58'30", long 118°24'15", Hydrologic Unit 17070102.
Owner: Earl Ransom.
AQUIFER.--Gravel.
WELL CHARACTERISTICS.--Dug and drilled irrigation well, size 6 x 6 ft (1.8 x 1.8 m) to 8-in (200 mm) diam, depth 46 ft (14 m), dug part cased with concrete.
DATUM.--Land surface datum is 867.12 ft (264.30 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of 4- x 4-in (100 x 100 mm) stringer, 0.48 ft (0.15 m) above datum.
REMARKS.--No measurements in 1981.
PERIOD OF RECORD.--1933 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.81 ft (2.38 m) below datum, May 25, 1939; lowest measured, 37.6 ft (11.46 m) below datum, Feb. 22, 1980.

UMATILLA COUNTY--Continued

452015119003201. Local number 3S/30½E-1BAA.
LOCATION.--Lat 45°20'25", long 119°00'29", Hydrologic Unit 17070103.
Owner: Joe Pedro.
AQUIFER.--Columbia River Basalt Group.
WELL CHARACTERISTICS.--Drilled unused well, diam 6 in (150 mm), reported depth 99 ft (30 m).
DATUM.--Altitude of land surface datum is 3,180 ft (970 m). Measuring point: Top of steel blocks beneath jet connector, 1.00 ft (0.30 m) below datum.
REMARKS.--No measurements in 1980.
PERIOD OF RECORD.--1953 to 1981 (discontinued).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.01 ft (6.71 m) below datum, Apr. 16, 1968; lowest measured, 39.81 ft (12.13 m) below datum, May 7, 1968.

UNION COUNTY

452730117595901. Local number 1S/38E-24DDC.
LOCATION.--Lat 45°27'26", long 117°59'50", Hydrologic Unit 17060104.
Owner: H. L. Wagner.
AQUIFER.--Basalt.
WELL CHARACTERISTICS.--Drilled irrigation well, diam 12 to 8 in (300 to 200 mm), depth 1,150 ft (350 m), cased to bottom.
DATUM.--Altitude of land surface datum is 2,750 ft (838 m). Measuring point: Center line of pressure gage, 6.00 ft (1.83 m) above datum.
PERIOD OF RECORD.--1950-74, 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 107 ft (33 m) above datum, Dec. 30, 1951; lowest measured, 53 ft (16 m) above datum, Aug. 13, 1951.

WATER LEVEL, IN FEET ABOVE LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 5	77.61	FEB 6	81.08	MAY 12	47.58	AUG 7	79.92

452840117580501. Local number 1S/39E-17CAD.
LOCATION.--Lat 45°28'34", long 117°57'48", Hydrologic Unit 17060104.
Owner: A. F. Furman.
AQUIFER.--Sand.
WELL CHARACTERISTICS.--Drilled domestic well, diam 4 in (100 mm), depth 46 ft (14 m).
DATUM.--Altitude of land surface datum is 2,735 ft (834 m). Measuring point: Top of coupling on casing, 1.00 ft (0.30 m) above datum.
PERIOD OF RECORD.--1940 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.40 ft (1.34 m) below datum, Feb. 17, 1965; lowest measured, 19.54 ft (5.96 m) below datum, Aug. 29, 1973.

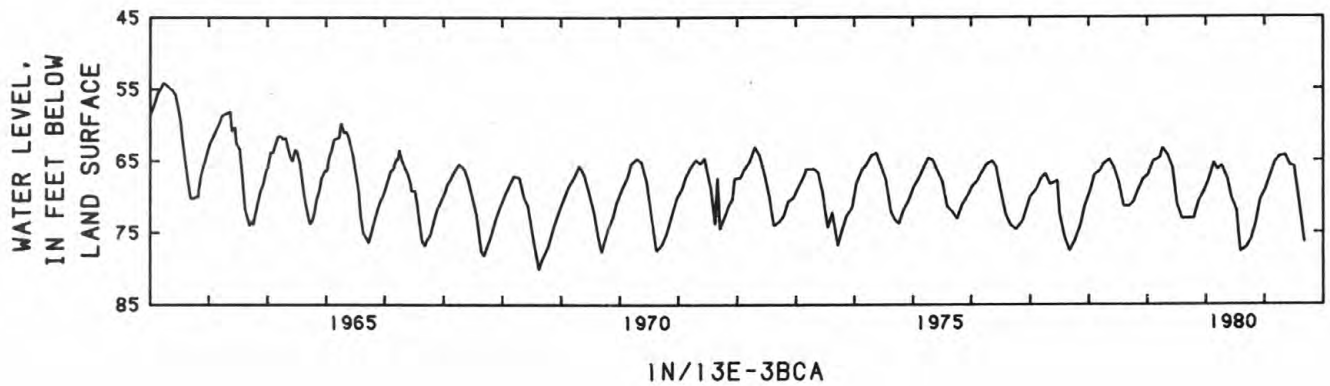
WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 5	11.28	FEB 6	10.12	MAY 12	8.11	AUG 7	10.13

453606121105701. Local number 1N/13E-3BCA.
LOCATION.--Lat 45°36'06", long 121°10'57", Hydrologic Unit 17070105.
Owner: City of the Dalles.
AQUIFER.--Basalt.
WELL CHARACTERISTICS.--Drilled municipal well, diam 12 in (300 mm), depth 200 ft (61 m), cased to 62 ft (19 m).
DATUM.--Land surface datum is 99.5 ft (30.3 m) National Geodetic Vertical Datum of 1929. Measuring point: Hole in pumpbase, 6.40 ft (1.95 m) below datum.
REMARKS.--Water levels published for this well (Jan. 1962, to Sept. 1971, subtract 0.6 ft from published water level, Sept. 15, 1971, to Sept. 1978, subtract 6.4 ft from published water levels) did not use proper measuring point correction. Corrected values are available at USGS office, Portland, Oregon.
PERIOD OF RECORD.--1926-30, 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.90 ft (5.20 m) below datum, July 19, 1928; lowest measured, 80.03 ft (24.39 m) below datum, Aug. 16, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	75.97	JAN 5	69.05	APR 1	64.43	JUL 1	65.85
NOV 3	73.89	FEB 4	67.07	MAY 6	64.25	AUG 3	70.90
DEC 2	70.55	MAR 4	65.19	JUN 4	65.65	SEP 4	76.24



453142121125501. Local number 1N/13E-32ACD.
LOCATION.--Lat 45°31'42", long 121°12'55", Hydrologic Unit 17070105.
Owner: Milton Martin.
AQUIFER.--Basalt.
WELL CHARACTERISTICS.--Drilled irrigation well, diam 6 in (150 mm), depth 368 ft (102 m), cased to 244 ft (74 m).
DATUM.--Altitude of land surface datum is about 1,200 ft (366 m). Measuring point: Center line of pressure gage, 1.5 ft (0.46 m) above datum.
PERIOD OF RECORD.--1946 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 186.5 ft (56.8 m) above datum, Apr. 1, 1953; lowest measured, 30.8 ft (9.4 m) above datum, Sept. 14, 1977.

WATER LEVEL, IN FEET ABOVE LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 19	124.74	FEB 3	133.52	-	-	-	-

453715121151801. Local number 2N/12E-25DDC.
LOCATION.--Lat 45°37'15", long 121°15'18", Hydrologic Unit 17070105.
Owner: Ernest A. Kuck.
AQUIFER.--Sandstone of Dalles Formation.
WELL CHARACTERISTICS.--Drilled well, diam 8 in (200 mm), depth 443 ft (135 m), cased to 30 ft (9 m).
DATUM.--Altitude of land surface datum is about 520 ft (158 m). Measuring point: Airline port in pumpbase, 0.80 ft (0.24 m) above datum.
PERIOD OF RECORD.--1947 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 104.93 ft (31.98 m) below datum, Mar. 16, 1951; lowest measured, 151.54 ft (46.19 m) below datum, Aug. 6, 1953.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 5	112.60	FEB 24	109.95	-	-	-	-

P pumping.
R Recently pumped.

October 1, 1978

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

U.S. DEPARTMENT OF THE INTERIOR
Geological Survey
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